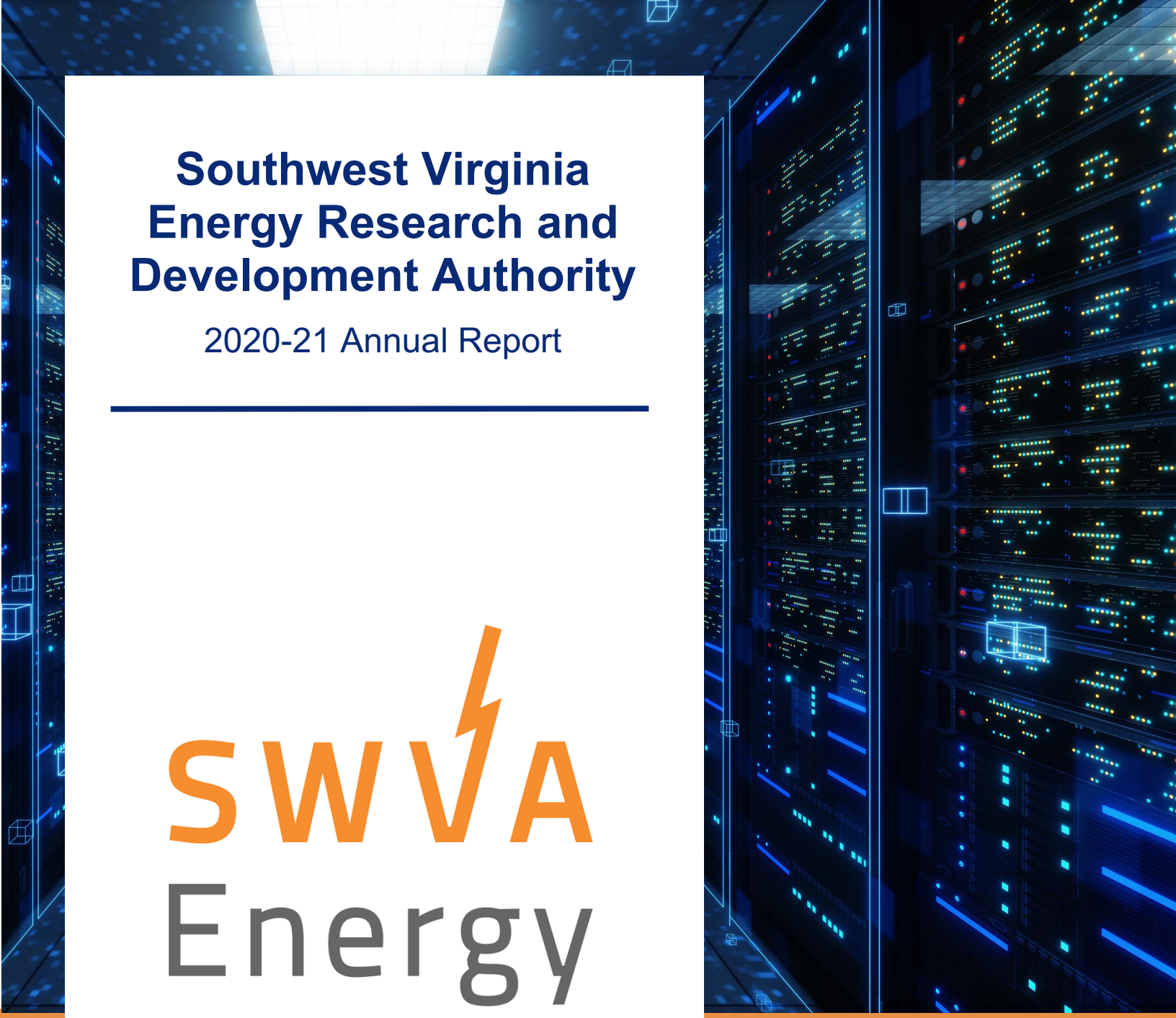

Southwest Virginia Energy Research and Development Authority

2020-21 Annual Report

SWVA Energy

Issued October 12, 2021

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Introduction

Southwest Virginia has a legacy of driving energy production and manufacturing with its key role in the extractive economy. Metallurgical coal helped build America, while wells drilled over 60 years ago still produce natural gas today. As the United States moves toward carbon-neutral energy and our traditional industries decline as a result, Southwest Virginia has the opportunity to continue to be a leader in energy. We will get there by leveraging the region's valuable assets and competing nationwide for entrepreneurs while focusing on renewable, clean and zero-carbon projects.

These "big idea" projects will help maintain Southwest Virginia's leadership position and support a public-private approach in the pursuit of investment-rated opportunities — sustainable, renewable models that can generate returns and ultimately deliver jobs and investment for the region:

- *Project Energizer* employs pumped-storage hydro technology on a small, affordable scale and provides an opportunity for Southwest Virginia to leverage its topography and be an innovator in renewable resources.
- *Project Innovation* involves developing a Southwest Virginia-located energy research park, a first-of-its-kind operation in the United States, that will host companies interested in studying, perfecting and eventually commercializing their ideas. It will also be a facility that allows middle and high school students in the region to see STEM-related energy projects in action.
- *Project Oasis* validates Southwest Virginia as a location of choice in the Commonwealth for data centers based on power and broadband infrastructure as well as the use of innovative energy applications unique to our region. Building on the region's competitive advantage, Southwest Virginia boasts the use of 51-degree mine pool water for HVAC cooling as a significant cost and energy-saving tool.

With each of these projects, this Authority's work can help change the world, and we'll do that with Southwest Virginia ingenuity. Of course, our work would not be possible with the support, expertise and funding from key education, public and private sector partners

— Mike Quillen, Chair

Purpose

The Southwest Virginia Energy Research and Development Authority was established in 2019 for the purposes of promoting opportunities for energy development in Southwest Virginia, creating jobs and economic activity in the region consistent with the Virginia Energy Plan, and positioning Southwest Virginia and the Commonwealth as a leader in energy workforce and energy technology research and development.

Delegate Terry Kilgore and the late Senator Ben Chafin patroned legislation during the 2019 General Assembly session creating the Authority. Their plan called for a project-focused entity that would show quick progress toward identifying a vision for the region and taking concrete steps toward capitalizing on the opportunity for Southwest Virginia to redefine itself in the new energy economy.

The enabling legislation had the following six goals in mind:

1. Leverage the strength in energy research and workforce development of Virginia's public and private institutions of higher education;
2. Support the development of pump storage hydropower in Southwest Virginia and energy storage generally;
3. Promote the development of renewable energy generation facilities on brownfield sites, including abandoned mine sites;
4. Promote energy workforce development;
5. Assist energy technology research and development by promoting the development of a Southwest Virginia Energy Park; and
6. Identify and work with the Commonwealth’s industries and nonprofit partners in advancing efforts related to energy development in Southwest Virginia.

Who We Are

MEMBERSHIP

The Authority is composed of 11 non-legislative citizen members, who reside in VA:

- 4 members appointed by the Governor
- 4 members appointed by the Speaker of the House
- 3 members appointed by the Senate Committee on Rules

Members are subject to the standards of conduct set forth in the State and Local Government Conflict of Interests Act and the provisions of the Virginia Freedom of Information Act.

TERM

Appointments are for terms of 4 years each. No member is eligible to serve more than 2 successive terms. After expiration of initial terms of 3 years or less, 2 additional 4-year terms may be served. Any appointment to fill vacancy of unexpired term does not constitute a term in determining eligibility for reappointment.

MEMBERS

- Mr. Mike Quillen — Chair
- Dr. Kris Westover — Vice Chair
- Mr. Steve Breeding
- Ms. Amanda Cox
- Mr. Jasen Eige
- Dr. March Hernick
- Dr. Mike Karmis
- Mr. Brad Kreps
- Mr. Duane Miller
- Mr. Dan Poteet
- Ms. Lydia Sinemus

ADVISOR

- Will Payne — Managing Partner, Coalfield Strategies, LLC

Project Development

PROJECT ENERGIZER

Project Energizer, an InvestSWVA initiative, is taking a disruptive approach to an older technology. Traditional pumped-storage hydro (PSH) projects have always been large scale and required significant civil works and land disturbance. Even though the technology is proven and often more affordable per unit than battery technology, overcoming scale for deployment particularly with more distributed generation is problematic. Dr. Thomas Eldredge and Dr. Hector Medina, both professors at Liberty University, have developed a small-scale, modular PSH system that can be deployed with very little land disturbance made from off-the-shelf components. By pairing this system with wind and solar power generation, GO Virginia Region One has the potential of deploying a small-scale, affordable and proven base-load renewable energy solution for local high-tech and industrial applications.

PSH was originally developed to allow power shifting from low-demand times to high-demand times. The concept is simple. During times of low-power demand, excess electricity is used to pump water from a water source located at a lower altitude point to storage in a reservoir at a higher altitude point. When power demand begins to peak, water is released from the reservoir down through a power house and back to the original water source, generating electricity along the way. The action can be repeated daily depending on power demand.

Drs. Eldridge and Medina have developed an idea of creating a self-contained system that can be constructed on the surface to contain the same PSH action without civil disturbance. The system will incorporate off-the-shelf containment bladders that will be used as upper and lower reservoirs. Standard high-density polyethylene piping will be connected above ground to move water up and down the device. A bi-directional pump house will be installed at the base of the system that will not only pump water up but also generate power as the water is released. The system is completely scalable up to 10 megawatts and offers a relatively low cost of approximately $2,400 per kilowatt of installed capacity. The design provides an exciting opportunity to affordably complement this technology with other renewable energy generation in a base-load solution.

Southwest Virginia is uniquely positioned to take advantage of this technology. There is one asset that Region One has that is necessary for effective deployment of these systems: topography relief. In order for the technology to generate power, 700 feet of drop, or head, is required to create the necessary force to generate power. Southwest Virginia has many locations that meet this critical site characteristic. Furthermore, the region has an inventory of previously disturbed properties that have been reclaimed from surface mining and could serve as locations for the PSH system. These sites also

offer co-location opportunities for wind and solar. Region One has the necessary assets to be a leader in the deployment of this technology, which would be a significant tool to attract high-tech business prospects seeking affordable renewable power.

The project team, which includes: Liberty University School of Engineering, LENOWISCO Planning District Commission, Virginia Department of Mines, Mineral and Energy (DMME), U.S. Department of Energy, Coalfield Strategies and Dominion Energy, seeks to validate this opportunity for Southwest Virginia by researching two topics: Identifying optimal areas within the region that can serve as locations for deployment of these systems and performing materials testing and analysis. The team will draw on recent DMME-led research that identified areas for renewable deployment by extending that search to include areas with viable relief. That will ensure the ability to co-locate other renewable generation assets. Additionally, because the proposed materials that will be used to build the system were not made specifically for PSH, testing has to be completed prior to deployment in order to ensure that the materials will hold up to operating stress.

Furthermore, this disruptive technology would help define Southwest Virginia as a hotbed for energy innovation for a number of reasons, including its ease of deployment, minimal land disturbance, low cost relative to other competitive battery applications and ability to pair with other renewable energy sources.

This project is funded with support from Coalfield Strategies via Dominion Energy funds ($10,000), DMME via U.S. Department of Energy funds ($37,500), GO Virginia ($50,000), the National Renewable Energy Laboratory ($100,000). The LENOWISCO Planning District Commission serves as the fiscal agent.

In August 2020, OnPoint Development Strategies was awarded the contract to perform location vetting and will partner with DMME. The teams kicked off their respective tasks beginning in September 2020 and will complete their work by December 2021.

PROJECT INNOVATION

Project Innovation, an InvestSWVA initiative, will help bring to life this Authority's vision to think outside the box on energy projects that combine innovative research, workforce development and economic development under one umbrella. The Energy Park, the first of its kind in the United States, will be the vehicle for innovation and business investment in Southwest Virginia. It will host companies that are interested in studying, perfecting and eventually commercializing their ideas. The Park will provide land, labs and scientific assistance to innovators in the energy industry. The region will benefit from this activity as the Park provides assistance in commercialization to the private

sector, a key value-add that will encourage investment in and attract new industries and jobs to Southwest Virginia.

Given Southwest Virginia's history and its unique set of assets that include over 100,000 acres of previously mined property, over 9,000 gas wells, mine cavities and boundless water, the region provides a perfect location for companies using the Energy Park to focus on four key areas of research: Electricity Generation, Geoenergy, Going Digital and the Circular Economy. Electricity Generation research will be focused on renewables, storage technology, carbon capture and high efficiency, low emission technology. Geoenergy means any energy that would come from the earth, such as geothermal or eco-friendly coal or natural gas energy production. Going Digital research will focus on strategies to make our energy delivery systems and facilities more efficient, while Circular Economy research will evaluate options for end-of-life strategies for renewable generation components and the remains of the fossil fuel industry.

Additionally, the project team behind the Energy Park is committed to education, particularly STEM. This education component is a centerpiece of the plan to grow the Park, and programs will emphasize smart energy technologies through partnerships with local schools and offer hands-on experiences, regional competitions and summer learning opportunities. The education component is important in preparing Southwest Virginia's workforce for new energy jobs that are created by the Park's activities.

In order to kickstart the development of the Energy Park, the project team is researching two broad areas, the first of which will be location vetting for park activities. As discussed above, there are over 100,000 acres of reclaimed surface mined properties in Southwest Virginia plus adjacent underground mines. This vetting process is unlike traditional site development work — it requires significant expertise in energy technologies and how we can leverage the region's geography and topography.

The project team is drawing on years of area knowledge and is working with consultants to complete this work and to lay out the Park's design. Secondly, the team is researching and designing the Park's governance while also developing a plan for start-up and long-term sustainability. Once complete, these two activities will set the stage for the region to move forward into the development and ultimately implementation of this Park. A private entity will secure private dollars and grant funds, manage the site (or sites). It will also work with partners to lead the public and education components and market the opportunity to energy companies and entrepreneurs while ultimately developing projects like Project Energizer, Project Revolution and Project Oasis.

This project is funded with support from GO Virginia ($100,000) and the U.S. Economic Development Administration ($150,000). The LENOWISCO Planning District Commission serves as the fiscal agent.

In August 2020, Coalfield Strategies was awarded the contract to perform operations planning, while the work of site vetting for the primary and possible satellite locations was awarded to a team including HDR, Marshall Miller & Associates and Thompson & Litton. The teams kicked off their respective tasks beginning in September 2020, and final report is expected by October 1, 2021.

PROJECT OASIS

First introduced at an August 2019, Project Oasis identified and studied data center opportunities across GO Virginia Region One, particularly on previously mined land. The purpose of this InvestSWVA initiative was to provide third-party validation for the region to become the location of choice in the Commonwealth for data centers based on power and broadband infrastructure as well as the use of innovative energy applications unique to Southwest Virginia.

The Virginia Department of Mines, Minerals and Energy played a strategic role in helping study the use of 51-degree mine pool water for HVAC cooling as a significant cost and energy-saving tool. We had the country's foremost geothermal experts on our team — PCCI out of Alexandria, Virginia — validating that concept along with the engineering firm, Marshall Miller & Associates.

This project assembled a data center "Dream Team" of Virginia experts with extensive backgrounds in site readiness, power assets, broadband, economic analysis and resiliency:

- Kent Hill of On Point Development Strategies was the project lead working with InvestSWVA. Hill is well known in the industry, having led Dominion Energy's economic development efforts many years;
- Fletcher Mangum and David Zorn of Mangum Economics;
- Vinay Nagpal of InterGlobix, our fiber expert; and
- Phillip Sandino of Data Energy Consulting, who served as Virginia's point person for COVID-19 response measures for the data center industry.

The Northern Virginia Technology Council and the Data Center Coalition offered guidance throughout the analysis. Furthermore, many other public and private organizations throughout the region stepped up in significant ways, including Appalachian Power, Dominion Energy, Old Dominion Power, Point Broadband, Scott County Telephone Cooperative, Tennessee Valley Authority and our regional and local economic developers.

This project was funded with support from DMME via non-state generated dollars ($50,000) and GO Virginia ($50,000). The LENOWISCO Planning District Commission served as the fiscal agent.

OnPoint Development Strategies was awarded the contract to perform a market analysis as well determine ideal locations in which to site projects with the assistance of DMME. PCCI partnered with Marshall Miller & Associates to determine the feasibility of mine pool water circulation used to augment data center cooling and calculate the impact of water circulation stress on mine stability. The team kicked off their respective tasks beginning in October 2019 and announced their findings on October 5, 2020.

Summary

The Project Oasis study found that Southwest Virginia is well-positioned for data centers because of land availability, geothermal cooling opportunities unique to the region, and workforce readiness and development. It also outlined policy and infrastructure changes that could be made by the region and state to make Southwest Virginia more attractive for data centers. The full report can be downloaded here: https://www.investswva.org/s/Project-Oasis-Final-Report-10-01-20.pdf. Highlights from the study's executive summary are below:

Economic Impact

The economic and fiscal impact analysis that was conducted for Project Oasis estimated that a large data center locating in the region would result in over 2,000 jobs created during construction, 40 direct and 59 additional permanent jobs, $233 million in economic activity during construction, and over $50 million in economic activity annually once operations begin.

Land and Geothermal Cooling

As data center suitable real estate becomes increasingly scarce and extremely expensive in Northern Virginia, other parts of the state with abundant power and fiber infrastructure have seen increased interest from data center developers.

Data centers have unique site and infrastructure requirements. There are multiple sites within GO Virginia Region One that could be suitable for a large data center. An assessment of available publicly controlled sites in the region of 25 acres or larger was conducted utilizing current data center industry site selection criteria.

Six sites met the general criteria for a large 36 MW hyperscale data center, and four additional sites could be suitable for a smaller data center of up to 10 MW. Two of the sites have opportunities for geothermal cooling through utilization of 51-degree mine water contained in vast pools below the

surface of previously mined properties. An additional site has underground space that provides a consistent 55-degree temperature. Both conditions maximize water utilization and make data center operations more sustainable.

The annual savings for a geothermal cooling system would be over $1 million annually in reduced electric costs and municipal water purchases. Factoring in savings for avoided maintenance and other costs for a conventional system, the mine water system would provide a favorable return on investment and result in net annual savings for the data center operator. Coalfield Strategies, InvestSWVA's project development team, is currently working on a pilot project with the Southwest Virginia Energy Research and Development Authority utilizing available grant funding that could be presented to data center companies with significant sustainability goals.

The region provides a low-risk option from natural and man-made disasters and meets distance requirements for disaster recovery and back up from primary data center locations such as Ashburn, Richmond, and Boydton, VA (Microsoft). The electric transmission network that supplies the region has three transmission providers and is electrically diverse from data center hubs in Northern Virginia, Richmond, and North Carolina.

Sustainability

Most new renewable energy projects for data centers in the current market utilize solar energy, which requires a large land area (6-10 acres per MW). Southwest Virginia has ample previously mined properties suitable for solar development.

The availability of solar development potential, cost-effective geothermal cooling, and the region's desire to transform itself from a coal producing area to an innovative renewable energy hub, provides a compelling case for data centers who are increasingly mandating new facility locations that allow sustainability goals to be met.

Workforce

There is a reasonable pool of workers in the region with skills and training that are potentially transferrable to a data center environment. Wages for IT workers such as network architects and information security analysts are 17% less in GO Virginia Region One than the national average. Strong IT training programs and resources exist with the community colleges in the region and the University of Virginia at Wise.

State and Local Incentives

In addition to Virginia's competitive statewide incentives, the Commonwealth allows a separate property tax rate to encourage investment (i.e. property tax on data center equipment). No localities in GO Virginia Region One currently have a data center specific taxation class. However, recent discussions with local government officials in the region have indicated there is a strong willingness to review tax structure for potential future changes that would make them more competitive. A tax rate and depreciation schedule that is competitive with localities such as Henrico County and Chesterfield County will be necessary to make the region a cost-effective alternative for this capital-intensive industry.

A Construction Employment Tax Credit of 20% of wages paid for construction workers for a data center or similar capital-intensive project located in underserved and rural areas should be evaluated.

Appendix A — Code of Virginia

Chapter 16. Southwest Virginia Energy Research and Development Authority.

§ 67-1600. (Expires July 1, 2029) Definitions.
As used in this chapter, unless the context requires a different meaning:

"Authority" means the Southwest Virginia Energy Research and Development Authority created pursuant to this chapter.

"Developer" means any private developer of an energy development project in Southwest Virginia.

"Energy development project" means an electric generation facility located within Southwest Virginia and includes interests in land, improvements, and ancillary facilities.

"Southwest Virginia" means the region of the Commonwealth designated as Southwest Virginia in § 22.1-350.

2019, cc. 555, 556.

§ 67-1601. (Expires July 1, 2029) Authority created; purpose.
The Southwest Virginia Energy Research and Development Authority is created as a body corporate and a political subdivision of the Commonwealth and as such shall have, and is vested with, all of the politic and corporate powers as are set forth in this chapter. The Authority is established for the purposes of promoting opportunities for energy development in Southwest Virginia, to create jobs and economic activity in Southwest Virginia consistent with the Virginia Energy Plan prepared pursuant to Chapter 2 (§ 67-200 et seq.), and to position Southwest Virginia and the Commonwealth as a leader in energy workforce and energy technology research and development. The Authority may also consult with research institutions, businesses, nonprofit organizations, and stakeholders as the Authority deems appropriate. The Authority shall have only those powers enumerated in this chapter.

2019, cc. 555, 556.

§ 67-1602. (Expires July 1, 2029) Membership; terms; vacancies; expenses.
A. The Authority shall be composed of 11 nonlegislative citizen members appointed as follows: Four members shall be appointed by the Governor, four members shall be appointed by the Speaker of the House of Delegates, and three members shall be appointed by the Senate Committee on Rules. All members of the Authority shall reside in the Commonwealth.

B. Except as otherwise provided herein, all appointments shall be for terms of four years each. No member shall be eligible to serve more than two successive four-year terms. After expiration of an initial term of three years or less, two additional four-year terms may be served by such member if appointed thereto. Appointments to fill vacancies, other than by expiration of a term, shall be made for the unexpired terms. Any appointment to fill a vacancy shall be made in the same manner as the original appointment. The remainder of any term to which a member is appointed to fill a vacancy shall not constitute a term in determining the member's eligibility for reappointment.

C. The Authority shall appoint from its membership a chairman and a vice-chairman, both of whom shall serve in such capacities at the pleasure of the Authority. The chairman, or in his absence the vice-chairman, shall preside at all meetings of the Authority. The meetings of the Authority shall be held on the call of the chairman or whenever a majority of the members so request. A majority of members of the Authority serving at any one time shall constitute a quorum for the transaction of business.

D. Members shall serve without compensation. However, all members may be reimbursed for all reasonable and necessary expenses incurred in the performance of their duties as provided in §§ 2.2-2813 and 2.2-2825. Such expenses shall be paid from such funds as may be appropriated to the Authority by the General Assembly.

E. Members of the Authority shall be subject to the standards of conduct set forth in the State and Local Government Conflict of Interests Act (§ 2.2-3100 et seq.) and may be removed from office for misfeasance, malfeasance, nonfeasance, neglect of duty, or misconduct in the manner set forth therein.

F. Except as otherwise provided in this chapter, members of the Authority shall be subject to the provisions of the Virginia Freedom of Information Act (§ 2.2-3700 et seq.).

2019, cc. 555, 556.

§ 67-1603. (Expires July 1, 2029) Powers and duties of the Authority.
In addition to such other powers and duties established under this chapter, the Authority shall have the power and duty to:

1. Adopt, use, and alter at will an official seal;

2. Make bylaws for the management and regulation of its affairs;

3. Maintain an office at such place or places within the Commonwealth as it may designate;

4. Accept, hold, and administer moneys, grants, securities, or other property transferred, given, or bequeathed to the Authority, absolutely or in trust, from any source, public or private, for the purposes for which the Authority is created;

5. Make and execute contracts and all other instruments and agreements necessary or convenient for the exercise of its powers and functions;

6. Employ, in its discretion, consultants, attorneys, architects, engineers, accountants, financial experts, investment bankers, superintendents, managers, and such other employees and agents as may be necessary and fix their compensation to be payable from funds made available to the Authority;

7. Invest its funds as permitted by applicable law;

8. Receive and accept from any federal or private agency, foundation, corporation, association, or person grants, donations of money, or real or personal property for the benefit of the Authority, and receive and accept from the Commonwealth or any state, and from any municipality, county, or other political subdivision thereof and any other source, aid or contributions of either money, property, or other things of value, to be held, used, and applied for the purposes for which such grants and contributions may be made;

9. Enter into agreements with any department, agency, or instrumentality of the United States or of the Commonwealth and with lenders and enter into loans with contracting parties for the purpose of planning, regulating, and providing for the financing or assisting in the financing of any project;

10. Do any lawful act necessary or appropriate to carry out the powers herein granted or reasonably implied;

11. Leverage the strength in energy workforce and energy technology research and development of Virginia's public and private institutions of higher education;

12. Support the development of pump storage hydropower in Southwest Virginia and energy storage generally;

13. Promote the development of renewable energy generation facilities on brownfield sites, including abandoned mine sites;

14. Promote energy workforce development;

15. Assist energy technology research and development by, among other actions, promoting the development of a Southwest Virginia Energy Park; and

16. Identify and work with the Commonwealth's industries and nonprofit partners in advancing efforts related to energy development in Southwest Virginia.

2019, cc. 555, 556.

§ 67-1604. (Expires July 1, 2029) Annual report.
On or before October 15 of each year, beginning in 2020, the Authority shall submit an annual summary of its activities and recommendations to the Governor and the Chairmen of the House Appropriations Committee, the Senate Finance Committee, and the House and Senate Commerce and Labor Committees.

2019, cc. 555, 556.

§ 67-1605. (Expires July 1, 2029) Confidentiality of information.
A. The Authority shall hold in confidence the personal and financial information supplied to it, or maintained by it, concerning the siting and development of energy projects.

B. Nothing in this section shall prohibit the Authority, in its discretion, from releasing any information that has been transformed into a statistical or aggregate form that does not allow the identification of the person who supplied particular information.

C. Information supplied by or maintained on persons or entities applying for or receiving allocations of federal loan guarantees, as well as specific information relating to the amount and identity of recipients of such distributions, shall be subject to disclosure in accordance with the Virginia Freedom of Information Act (§ 2.2-3700 et seq.).

2019, cc. 555, 556.

§ 67-1606. (Expires July 1, 2029) Declaration of public purpose; exemption from taxation.
A. The exercise of the powers granted by this chapter shall be in all respects for the benefit of the citizens of the Commonwealth and for the promotion of their welfare, convenience, and prosperity.

B. The Authority shall be performing an essential governmental function in the exercise of the powers conferred upon it by this chapter, and the property of the Authority and its income and operations shall be exempt from taxation or assessments upon any property acquired or used by the Authority under the provisions of this chapter.

2019, cc. 555, 556.

§ 67-1607. (Expires July 1, 2029) Sunset.
The provisions of this chapter shall expire on July 1, 2029.

2019, cc. 555, 556.

Appendix B — Bylaws

SOUTHWEST VIRGINIA ENERGY RESEARCH AND DEVELOPMENT AUTHORITY

BYLAWS

Approved 9/30/19

ARTICLE I. APPLICABILITY

Section 1. General.

The provisions of these Bylaws are applicable to all proceedings of the Southwest Virginia Energy Research and Development Authority (the Authority) to the extent that the same are not inconsistent with the Code of Virginia or Executive Orders applicable to these proceedings. Whenever the provisions of these Bylaws are in conflict with the provisions of the Code of Virginia or an applicable Executive Order, the latter shall control.

Section 2. Authority and Limitations.

The Authority is constituted under Section 67-1601 of the Code of Virginia as a body corporate and a political subdivision of the Commonwealth of Virginia. The Authority is specifically charged with the duties and responsibilities set forth in Title 67, Chapter 16, of the Code of Virginia, primarily for the purposes of promoting opportunities for energy development in Southwest Virginia, to create jobs and economic activity in Southwest Virginia consistent with the Virginia Energy Plan prepared pursuant to Chapter 2 (§ 67-200 et seq.), and to position Southwest Virginia and the Commonwealth as a leader in energy workforce and energy technology research and development.

ARTICLE II. MEMBERS

Section 1. Membership.

The Authority shall be composed of 11 nonlegislative citizen members appointed as follows: Four members shall be appointed by the Governor, four members shall be appointed by the Speaker of the House of Delegates, and three members shall be appointed by the Senate Committee on Rules. All members of the Authority shall reside in the Commonwealth.

Section 2. Terms.

Except as otherwise provided herein, all appointments shall be for terms of four years each. No member shall be eligible to serve more than two successive four-year terms. After expiration of an initial term of three years or less, two additional four-year terms may be served by such member if appointed thereto.

Section 3. Vacancies.

Vacancies arising in the Authority shall be made in the same manner as the original appointment. The remainder of any term to which a member is appointed to fill a vacancy shall not constitute a term in determining the member's eligibility for reappointment.

Section 4. Reimbursement.

Members shall serve without compensation. However, all members may be reimbursed for all reasonable and necessary expenses incurred in the performance of their duties as provided in §§ 2.2-2813 and 2.2-2825. Such expenses shall be paid from such funds as may be appropriated to the Authority by the General Assembly.

ARTICLE III. OFFICERS

Section 1. Election of Chair and Vice-Chair.

The Authority shall elect a Chair and Vice-Chair at the beginning of its first meeting to serve for two-year terms.

Section 2. Vacancies.

Vacancies in the position of Chair or Vice-Chair shall be filled for the remainder of the term by voice vote or roll call vote of the Authority at the next meeting following the resignation of the former incumbent.

ARTICLE IV. MEETINGS

Section 1. Meetings.

The Authority shall meet three times per calendar year and may meet more frequently at the call of the Chairman. No business requiring a vote or final decision of the Authority may be conducted in the absence of a quorum, as defined below.

Section 2. Annual Meetings.

The regular meeting held in the fourth quarter of the calendar year shall be designated as an annual meeting. Elections of officers shall be held at the Annual Meeting.

Section 3. Committee Meetings.

The Authority may establish committees from time to time as needed to carry out the work of the Authority; provided, however, that all meetings of a committee consisting of more than two members of the Authority are open to the public and be preceded by the notice requirements set forth in Va. Code Section 2.2-3707 of the Virginia Freedom of Information Act, Va. Code Sections 2.2-3700 *et seq*.

Section 4. Special Meetings.

The Chair or any three members of the Authority may call a special meeting for specific purpose or purposes. No business shall be transacted at such special meeting except that expressly sent out in the notice of the special meeting.

Section 5. Notice of Meetings.

In all cases, the public shall be notified of meetings of the Authority at a time and in a manner consistent with the requirements of the current Freedom of Information Act, Va. Code Section 2.2-3707.

Section 6. Quorum.

For any meeting of the Authority, a majority of the members of the Authority shall constitute a quorum. If a quorum has not been achieved, the meeting of the Authority may proceed; provided, however, that voting on matters before the Authority shall be postponed until a meeting of the Authority at which a quorum is present.

Section 7. Conduct of Meetings.

The Chair of the Authority shall conduct the meetings of the Authority and shall rule on the interpretation and application of the Va. Code and these by-laws.

The Vice-Chair of the Authority shall preside over meetings of the Authority in the absence of the Chair. In the event that neither the Chair nor the Vice-Chair of the Authority shall be in attendance at a meeting where a quorum is nonetheless present, any member of the Authority may call the meeting to order, and the members present shall elect a Chair *pro tempore* to preside over the meeting.

All actions and decisions of the Authority shall be made upon the motion of a member, duly seconded by another member and approved by a majority of the members who are present and voting.

The Chair shall put the question submitted to the Authority for a voice vote and shall call for a vote only after determining that there are no more Authority members who wish to speak or upon approval of a motion to close debate.

Any member who may not participate in the Authority's consideration of a matter under the Virginia Conflict of Interest Act must comply with the disclosure requirements of the Act and not participate in the discussion or vote on the matter.

If it appears to the Chair, upon the voice vote being taken, that the members of the Authority are divided on any question, the Chair shall determine the vote of the members by roll call. A tie vote on any matter defeats the motion or issue upon which the vote is taken. At the conclusion of the vote on the motion, the Chair shall announce whether the motion has been adopted or defeated.

Section 8. Agenda.

The proposed agenda for any meeting shall be determined by the Chair in consultation with the Authority's staffing entity. In addition, any members of the Authority may suggest items to be included on the agenda.

The agenda for regular meetings of the Authority will normally include the following: (1) review and approval of the last minutes of the Authority; (2) a status report on the work plan and action items agreed to by the Authority; (3) a status report on projects; and (4) other information of interest to the Authority.

An opportunity shall be provided at each meeting of the Authority for public comment. Any person who desires to speak will be asked to provide his or her name and the matter to be addressed prior to each meeting at which the public is able to comment.

Section 9. Authority Requests for Staff Assistance.

Any Authority member may request assistance from the Authority's staffing entity, provided the request has been coordinated through the Chair or Vice-Chair of the Authority.

Section 10. Amendments.

The by-laws of the Authority may be amended at any regular meeting of the Authority at which a quorum is present by a majority vote.

ARTICLE V. BYLAWS

Section 1. Effective Date.

These Bylaws shall take effect immediately upon adoption by the Authority.

Appendix C — In the News

The Authority and its work appeared in the following news stories (listed chronologically):

Data center study outlines opportunities to use Southwest Virginia's assets for more sustainable operations

~ Study outlines existing advantages and makes recommendations for competitiveness ~

InvestSWVA Press Release
October 5, 2020

InvestSWVA today released the findings of a study into opportunities to attract and grow the data center industry in Southwest Virginia. The study, called Project Oasis, sought third-party validation for GO Virginia Region One to become a location of choice in the Commonwealth for data centers based on power and broadband infrastructure along with the use of geothermal cooling technology with the billions of gallons of water collected in underground mines as a significant energy and cost-savings tool.

"Southwest Virginia is primed to become the next hot spot for data centers," said U.S. Senator Mark Warner. "This is a rapidly growing industry in Virginia and companies would be smart to consider GO Virginia Region One due to its land availability, ready workforce, and unique opportunities for sustainability and growth."

"Reinventing our economy can include reusing our existing infrastructure," said Congressman Morgan Griffith (R–VA9). "The water pooled in abandoned mine sites could serve industrial operations requiring substantial water use, such as data centers. This innovation would be a way to draw economic opportunities to Southwest Virginia. Just like the potential to use our abandoned mines for closed-loop hydropower, the possibilities presented by Project Oasis are exciting, and I stand ready to assist its progress to benefit our region."

"Local, state and federal leaders have been working tirelessly to attract economic development to Southwest Virginia, and data centers are a hot topic as we look to bring more jobs here," said Delegate Israel O'Quinn. "Data centers provide a unique opportunity to modernize our economy, bring 21st century jobs to our region, and leverage some of our strongest assets including land and sustainability."

"Project Oasis provided an in-depth look at how we can attract data centers to Southwest Virginia, what we need to do in order to attract data centers, and the opportunities that could come by making some key investments in infrastructure," said Will Payne, Managing Partner of Coalfield

Strategies and project lead for InvestSWVA. “The study shows that Southwest Virginia is a prime location for data centers, particularly as the industry looks for location diversity.”

InvestSWVA, a public-private business attraction and marketing campaign for GO Virginia Region One, launched in 2019 under the umbrella of the Virginia Tobacco Region Revitalization Commission and backed by private industry. The initiative is co-chaired by Senator Ben Chafin, Delegate Terry Kilgore, Delegate Israel O’Quinn and Senator Todd Pillion. InvestSWVA has a strategic partnership with the Northern Virginia Technology Council.

The Project Oasis study found that Southwest Virginia is well-positioned for data centers because of land availability, geothermal cooling opportunities unique to the region, and workforce readiness and development. It also outlined policy and infrastructure changes that could be made by the region and state to make Southwest Virginia more attractive for data centers.

The study was led by R. Kent Hill, managing principal of On Point Development Strategies and the former manager of strategic economic development for Dominion Energy. The LENOWISCO Planning District Commission and the Southwest Virginia Energy Research and Development Authority served as strategic partners, while funding came from the GO Virginia Region One Council and the Virginia Department of Mines, Minerals and Energy.

Highlights from the study’s executive summary are below:

Economic Impact

The economic and fiscal impact analysis that was conducted for Project Oasis estimated that a large data center locating in the region would result in over 2,000 jobs created during construction, 40 direct and 59 additional permanent jobs, $233 million in economic activity during construction, and over $50 million in economic activity annually once operations begin.

Land and Geothermal Cooling

As data center suitable real estate becomes increasingly scarce and extremely expensive in Northern Virginia, other parts of the state with abundant power and fiber infrastructure have seen increased interest from data center developers.

Data centers have unique site and infrastructure requirements. There are multiple sites within GO Virginia Region One that could be suitable for a large data center. An assessment of available publicly

controlled sites in the region of 25 acres or larger was conducted utilizing current data center industry site selection criteria.

Six sites met the general criteria for a large 36 MW hyperscale data center, and four additional sites could be suitable for a smaller data center of up to 10 MW. Two of the sites have opportunities for geothermal cooling through utilization of 51-degree mine water contained in vast pools below the surface of previously mined properties. An additional site has underground space that provides a consistent 55-degree temperature. Both conditions maximize water utilization and make data center operations more sustainable.

The annual savings for a geothermal cooling system would be over $1 million annually in reduced electric costs and municipal water purchases. Factoring in savings for avoided maintenance and other costs for a conventional system, the mine water system would provide a favorable return on investment and result in net annual savings for the data center operator. Coalfield Strategies, InvestSWVA's project development team, is currently working on a pilot project with the Southwest Virginia Energy Research and Development Authority utilizing available grant funding that could be presented to data center companies with significant sustainability goals.

The region provides a low-risk option from natural and man-made disasters and meets distance requirements for disaster recovery and back up from primary data center locations such as Ashburn, Richmond, and Boydton, VA (Microsoft). The electric transmission network that supplies the region has three transmission providers and is electrically diverse from data center hubs in Northern Virginia, Richmond, and North Carolina.

Sustainability

Most new renewable energy projects for data centers in the current market utilize solar energy, which requires a large land area (6-10 acres per MW). Southwest Virginia has ample previously mined properties suitable for solar development.

The availability of solar development potential, cost-effective geothermal cooling, and the region's desire to transform itself from a coal producing area to an innovative renewable energy hub, provides a compelling case for data centers who are increasingly mandating new facility locations that allow sustainability goals to be met.

Workforce

There is a reasonable pool of workers in the region with skills and training that are potentially transferrable to a data center environment. Wages for IT workers such as network architects and information security analysts are 17% less in GO Virginia Region One than the national average. Strong IT training programs and resources exist with the community colleges in the region and the University of Virginia at Wise.

State and Local Incentives

In addition to Virginia's competitive statewide incentives, the Commonwealth allows a separate property tax rate to encourage investment (i.e. property tax on data center equipment). No localities in GO Virginia Region One currently have a data center specific taxation class. However, recent discussions with local government officials in the region have indicated there is a strong willingness to review tax structure for potential future changes that would make them more competitive. A tax rate and depreciation schedule that is competitive with localities such as Henrico County and Chesterfield County will be necessary to make the region a cost-effective alternative for this capital-intensive industry.

A Construction Employment Tax Credit of 20% of wages paid for construction workers for a data center or similar capital-intensive project located in underserved and rural areas should be evaluated.

https://www.investswva.org/news/data-center-study-outlines-opportunities

A large data center could have $50M annual impact on SWVA, study finds

Economic development study makes case for locating data centers in former coal mining areas

By Sydney Lake
Virginia Business
October 5, 2020

Southwest Virginia is well-positioned for data centers and a large data center could result in more than 2,000 jobs and $50 million in annual economic activity, according to the Project Oasis study conducted by OnPoint Development Strategies and released Monday by InvestSWVA.

Due to its land availability, geothermal cooling opportunities and workforce readiness and development, Southwest Virginia could be an attractive data center destination, according to the study. A large data center located in the region could create more than 2,000 jobs during

construction, 40 direct and 59 additional permanent jobs, the study found, with $233 million in economic activity generated during construction and more than $50 million in annual economic activity once operations begin.

“Southwest Virginia is primed to become the next hot spot for data centers,” U.S. Sen. Mark Warner said in a statement. “This is a rapidly growing industry in Virginia and companies would be smart to consider GO Virginia Region One due to its land availability, ready workforce, and unique opportunities for sustainability and growth.”

In GO Virginia Region One, which was the focus of the study, there are six sites that met the general criteria for a large, 36-megawatt hyperscale data center and four additional sites could host smaller data centers of up to 10 megawatts. Three sites have geothermal cooling potential, with the ability to source 51-degree or 55-degree water from underground pools in previously mined properties. Geothermal cooling systems could save a data center more than $1 million annually in reduced electric costs and municipal water water purchases.

Previously mined properties could also be used for solar development, the study found.

“The availability of solar development potential, cost-effective geothermal cooling, and the region’s desire to transform itself from a coal-producing area to an innovative renewable energy hub, provides a compelling case for data centers who are increasingly mandating new facility locations that allow sustainability goals to be met,” according to the study.

The study found a reasonable pool of workers with transferable skills in the region, as well as strong IT training programs and resources at community colleges and the University of Virginia at Wise that could fulfill workforce training requirements. Tax incentives are also part of the discussion, as the commonwealth allows for a separate property tax rate to encourage investment. Although no localities in GO Virginia Region One have a data-center-specific taxation class, local government officials are discussing more competitive tax rates for data centers, according to the study.

Led by R. Kent Hill, managing principal of OnPoint Development Strategies, LENOWISCO Planning District Commission and the Southwest Virginia Energy Research and Development Authority served as strategic partners for the study, and funding was provided by the GO Virginia Region One Council and the Virginia Department of Mines, Minerals and Energy.

“Project Oasis provided an in-depth look at how we can attract data centers to Southwest Virginia, what we need to do in order to attract data centers and the opportunities that could come by making some key investments in infrastructure,” Coalfield Strategies Managing Partner Will Payne, project

lead for InvestSWVA, said in a statement. “The study shows that Southwest Virginia is a prime location for data centers, particularly as the industry looks for location diversity.”

https://www.virginiabusiness.com/article/a-large-data-center-could-have-50m-annual-impact-on-swva-study-finds/

Appalachian Power, Dominion Energy launch partnership with InvestSWVA, Southwest Virginia leaders to advance energy storage technology, attract industry prospects

~ Partnership will focus on research, development, manufacturing and deployment ~

InvestSWVA Press Release
October 13, 2020

Bristol, VA — Appalachian Power and Dominion Energy, Virginia’s largest electric utilities, announced today a public-private partnership with InvestSWVA to advance energy storage technology and attract industry prospects to the region. The partnership also includes the Appalachian School of Law, Mountain Empire Community College and the Southwest Virginia Energy Research and Development Authority.

“As a leader in renewable energy, we are excited by the opportunity and potential this presents to further diversify our energy mix,” said Chris Beam, Appalachian Power President and Chief Operating Officer. “Last year, Appalachian produced approximately 2,400 gigawatt-hours of energy from wind- and hydro-power and as our investment in renewables grows, so will our need for energy storage.”

“With the greater proliferation of renewables, energy storage expansion will be a vital component in providing stability to our grid and support our customer’s needs,” said Ed Baine, President of Dominion Energy Virginia. “Dominion Energy looks forward to working with our partners to support economic development in Southwest Virginia, which has long served as Virginia’s energy corridor.”

As Dominion Energy continues to increase its solar fleet – currently the third-largest among utility holding companies in the nation – and build the largest offshore wind project in North America off the coast of Virginia Beach, the company is looking for new and innovative ways to store the renewable energy it produces to maintain reliable service to customers. The company will soon begin construction on four Central Virginia energy storage projects recently approved by the State Corporation Commission. In addition, Dominion continues to evaluate the potential for a pumped

storage facility in the Southwest Virginia region to compliment the Bath County Pumped Storage Station described as the “largest battery in the world.”

With a vast customer base in Southwest Virginia and experience in renewables and energy storage, Appalachian Power will play a key role in the public-private partnership. For more than 50-years, the company has operated its Smith Mountain pumped storage facility, which holds water to harness energy as needed. Part of the American Electric Power system, Appalachian has in recent years expanded its portfolio to include more renewables, and will use its expertise to research ways energy storage can improve electric reliability for customers and attract new business and industry to this region.

Both Appalachian Power and Dominion Energy’s efforts in energy storage are bolstered by the Virginia General Assembly’s Grid Transformation & Security Act of 2018 and the Virginia Clean Energy Act of 2020. In addition, both companies are focused on how energy storage can maximize the impact of solar energy generation.

Under the Clean Energy Act, Appalachian Power is committed to providing customers with at least 600 megawatts of solar generation in Virginia by 2030. The company has signed contracts for 55 megawatts of solar, and earlier this year issued a request for proposals (RFP) for up to 200 megawatts of solar energy resources to include solar and an option for a battery storage system. Appalachian Power is currently in negotiations with developers on the proposals received through the RFP process.

Dominion Energy Virginia’s most recent long-term forecast calls for approximately 16,000 megawatts of solar in the state over the next 15 years to meet customers' energy needs.

Coalfield Strategies, LLC, a one-stop economic development firm driving new business investment to Southwest Virginia, will coordinate on-the-ground efforts with both utilities. The firm leads InvestSWVA, a public-private business attraction and marketing campaign launched under the umbrella of the Virginia Tobacco Region Revitalization Commission, in addition to project development efforts for the Southwest Virginia Energy Research and Development Authority. Coalfield Strategies will use recently completed market research and key site data collected from its portfolio of energy projects to define why the region is attractive to the energy storage industry.

“Virginia’s utilities are best positioned to drive the development and deployment of energy storage technology,” said Will Payne, Managing Partner of Coalfield Strategies and InvestSWVA lead. “Our team is excited to work with Appalachian Power and Dominion Energy in attracting industry

prospects to Southwest Virginia, and we have assembled partners that demonstrate the region's desire to redefine itself as the energy innovation capital of the East Coast."

Coalfield Strategies will continue to collaborate with the Virginia Department of Mines, Minerals and Energy, given the agency's expertise in the region's assets, including land, power and water. The firm will also tap two key statewide authorities in order to leverage industry relationships and expertise, including the Southwest Virginia Energy Research and Development Authority and the Virginia Solar Energy Development and Energy Storage Authority.

"Southwest Virginia is poised to drive energy storage technology development, and we are looking forward to working hand-in-hand with Appalachian Power and Dominion Energy to bring the region together around this opportunity," said Mike Quillen, Chair of the Southwest Virginia Energy Research and Development Authority. "Our team is going to think creatively and strategically on how to pair renewable energy generation with job-creating projects."

InvestSWVA, the Southwest Virginia Energy Research and Development Authority and the LENOWISCO Planning District Commission are currently leading three GO Virginia-supported energy projects to help establish the region's credibility in attracting renewable, clean and zero-carbon projects:

- Project Innovation is developing the Southwest Virginia Energy Research Park, a first-of-its-kind operation in the United States that will host companies and entrepreneurs interested in proving and eventually commercializing their technology.
- Project Energizer explores using pumped-storage hydro technology on a small, affordable scale and provides an opportunity for Southwest Virginia to leverage its topography as a competitive advantage.
- Project Oasis highlights Southwest Virginia's foothold in out-of-the-box thinking with the use of geothermal cooling technology with the billions of gallons of water collected in underground mines as a significant energy and cost-savings tool, not only for data centers but also for any industrial operation requiring robust power and water.

These projects benefit largely from the region's considerable inventory of reclaimed surface mined properties plus adjacent underground mines. Congressman Morgan Griffith (R–VA9), a member of the U.S. House Energy and Commerce Committee, has led efforts to secure over $30 million in funding from the U.S. Office of Surface Mining's Abandoned Mine Land Pilot Program to support land reclamation and economic development activities throughout the region. This funding will continue to play a strategic role in marketing Southwest Virginia as a leader in the new energy economy.

"Energy has been central to Southwest Virginia's past, and this announcement shows how important it will be to Southwest Virginia's future as well," said Congressman Morgan Griffith. "Energy storage technology can make use of our existing assets to create jobs and power industries in the region."

The Appalachian School of Law will lend its extensive educational and legal expertise in energy storage incentives around the country, the Federal Energy Regulatory Commission's new energy storage rule, and how energy storage is credited in the Regional Greenhouse Gas Initiative market Virginia appears poised to enter.

"Ensuring that storage technology providers can participate in wholesale electric markets and be properly compensated for the value they bring, as well as their environmental benefits, requires complex legal guidance," said Elizabeth McClanahan, Dean of the Appalachian School of Law and retired Justice of the Supreme Court of Virginia. "The Appalachian School of Law looks forward to assisting in this partnership by navigating the rules from the Federal Energy Regulatory Commission, the Regional Transmission Organizations and state agencies in order to successfully deploy electric storage and be profitable."

Mountain Empire Community College will help address workforce development considerations for industry prospects.

"Our focus on energy workforce development will help drive economic development opportunities," said Dr. Kris Westover, President of Mountain Empire Community College and Vice Chair of the Southwest Virginia Energy Research and Development Authority. "Pairing private industry with K-12 and higher education interests in the pursuit of energy storage technology will be a game-changer for our region."

This partnership aligns with the goals of InvestSWVA's legislative co-chairs when they created the Southwest Virginia Research and Development Authority during the 2019 General Assembly session.

"Southwest Virginia is a prime location for energy research and development activities that leverage our region's talent and natural resources," said Senator Ben Chafin. "Our legislative delegation is committed to seeing the region build on its long history of energy generation in order to grow our economy."

"Partnering with Appalachian Power and Dominion Energy allows the region to connect research and economic development in order to drive energy innovation in Southwest Virginia," said Delegate Terry Kilgore. "We should take an all-the-above approach to keep Southwest Virginia in a lead position."

"Our region offers the energy storage industry a strategic location to not only research and prove technology but also manufacture it," said Delegate Israel O'Quinn. "Southwest Virginia has the assets, workforce and incentives that are critical to attracting innovators and entrepreneurs."

"The value of this partnership is a coordinated effort between Virginia's largest utilities and the various economic development, workforce and policy leaders across the region," said Senator Todd Pillion. "We are committed to leveraging our relationships in order to aggressively pursue energy storage technology development and manufacturing opportunities in Southwest Virginia."

Dominion, Appalachian Power team up to expand energy storage
Electric utility giants to develop more capacity in SWVA

By Sydney Lake
Virginia Business
October 13, 2020

Virginia electric utility giants Appalachian Power and Dominion Energy Inc. announced Tuesday a public-private partnership with InvestSWVA that aims to expand renewable energy storage technology and attract industry prospects in Southwest Virginia.

"With the greater proliferation of renewables, energy storage expansion will be a vital component in providing stability to our grid and support our customer's needs," Dominion Energy Virginia President Ed Baine said in a statement. "Dominion Energy looks forward to working with our partners to support economic development in Southwest Virginia, which has long served as Virginia's energy corridor."

The partnership also includes the Appalachian School of Law, Mountain Empire Community College and the Southwest Virginia Energy Research and Development Authority. As Dominion Energy increases its wind power footprint the coast of Virginia Beach, the company is evaluating the potential for a pumped storage facility in Southwest Virginia — while Appalachian Power will research energy storage improvements for customers to attract new business and industry to the region.

"As a leader in renewable energy, we are excited by the opportunity and potential this presents to further diversify our energy mix," Chris Beam, Appalachian Power president and chief operating officer, said in a statement. "Last year, Appalachian produced approximately 2,400 gigawatt-hours of

energy from wind and hydro power and as our investment in renewables grows, so will our need for energy storage."

Dominion Energy is also working to increase its solar fleet and will soon begin construction on four Central Virginia energy storage projects approved by the State Corporation Commission. The company's pumped storage facility in Southwest Virginia will compliment the Bath County Pumped Storage Station, according to Dominion.

Appalachian Power for more than 50 years has operated its Smith Mountain pumped storage facility, which holds water to harness energy as needed. The company under the Clean Energy Act has also committed to providing customers at least 600 megawatts of solar energy in Virginia by 2030. Dominion's most recent forecast calls for approximately 16,000 megawatts of solar power in the state during the next 15 years.

Economic development firm Coalfield Strategies LLC, which leads InvestSWVA, will coordinate project efforts with both utilities.

"Virginia's utilities are best positioned to drive the development and deployment of energy storage technology," Coalfield Strategies Managing Partner Will Payne, InvestSWVA lead, said in a statement. "Our team is excited to work with Appalachian Power and Dominion Energy in attracting industry prospects to Southwest Virginia, and we have assembled partners that demonstrate the region's desire to redefine itself as the energy innovation capital of the East Coast."

Coalfield Strategies will also tap the Southwest Virginia Energy Research and Development Authority and the Virginia Solar Energy Development and Energy Storage Authority for collaboration on the projects.

The Appalachian School of Law will provide educational and legal expertise in energy storage incentives for the partnership and Mountain Empire Community College will help to address workforce development considerations.

Appalachian Power has 1 million customers in Virginia, West Virginia and Tennessee and is part of American Electric Power, a Fortune 500 electric utility that employs 17,400 people and serves nearly 5.4 million customers.

Dominion Energy is a Fortune 500 utility with 16,100 employees and more than 7 million customers in 18 states.

https://www.virginiabusiness.com/article/dominion-appalachian-power-team-up-to-expand-energy-storage/

Electric companies team up on Virginia energy storage partnership

By Kim Riley
Daily Energy Insider
October 14, 2020

Goals for storing renewable energy in the Commonwealth of Virginia this week led Appalachian Power and Dominion Energy to forge a public-private partnership with InvestSWVA, a marketing campaign sponsored by the Virginia Tobacco Region Revitalization Commission.

The aim of the partnership is to advance energy storage technology by focusing on research, development, manufacturing, and deployment that also could attract industry prospects to Southwest Virginia, the state's energy corridor.

"Energy has been central to Southwest Virginia's past, and this announcement shows how important it will be to Southwest Virginia's future as well," said U.S. Rep. Morgan Griffith (R-VA), who represents Virginia's 9th congressional district covering a large swath of southwestern Virginia. "Energy storage technology can make use of our existing assets to create jobs and power industries in the region."

Richmond, Va.-based Dominion Energy, which serves seven million gas and electricity customers in 20 states, plans to build the largest offshore wind project in North America off the coast of Virginia Beach and seeks innovative ways to store the renewable energy it produces to maintain reliable service, according to Dominion Energy Virginia President Ed Baine.

Additionally, Dominion soon will start construction on four central Virginia energy storage projects recently approved by the Virginia State Corporation Commission.

"With the greater proliferation of renewables, energy storage expansion will be a vital component in providing stability to our grid and support our customer's needs," Baine said on Oct. 13.

Appalachian Power, which is part of the investor-owned American Electric Power, serves one million customers in Virginia, West Virginia, and Tennessee. The company also operates its Smith Mountain pumped storage facility, which holds water to harness as-needed energy, said Chris Beam, Appalachian Power president and chief operating officer. "As a leader in renewable energy, we are

excited by the opportunity and potential this presents to further diversify our energy mix," Beam said Tuesday.

Appalachian Power has been expanding its portfolio to include more renewables and will help the partnership research ways energy storage might improve electric reliability for customers. Last year, for instance, Appalachian Power produced roughly 2,400 gigawatt-hours of energy from wind and hydropower. "As our investment in renewables grows," said Beam, "so will our need for energy storage."

Both Appalachian Power and Dominion Energy also are focused on how energy storage can maximize the impact of solar energy generation. Appalachian Power, for example, has committed to providing customers with at least 600 megawatts (MW) of solar generation in Virginia by 2030, while Dominion Energy Virginia expects to provide about 16,000 MW of solar in the state over the next 15 years.

"The value of this partnership is a coordinated effort between Virginia's largest utilities and the various economic development, workforce and policy leaders across the region," said Virginia Republican Sen. Todd Pillion, who represents the state's 40th district in Southwest Virginia. "We are committed to leveraging our relationships in order to aggressively pursue energy storage technology development and manufacturing opportunities in Southwest Virginia."

Another partner, Coalfield Strategies LLC, an economic development firm focused on bringing new business investment to Southwest Virginia, will coordinate on-the-ground efforts with both utilities via InvestSWVA, the public-private campaign it will lead. Coalfield Strategies plans to use market research and site data collected from its portfolio of energy projects to define why the region is attractive to the energy storage industry.

"Virginia's utilities are best positioned to drive the development and deployment of energy storage technology," Coalfield Strategies Managing Partner Will Payne said, adding that the InvestSWVA team has assembled partners "that demonstrate the region's desire to redefine itself as the energy innovation capital of the East Coast."

Payne said the firm also will tap two key statewide authorities — the Southwest Virginia Energy Research and Development Authority and the Virginia Solar Energy Development and Energy Storage Authority — to leverage industry relationships and expertise.

The partnership also includes the Appalachian School of Law, Mountain Empire Community College, and the Southwest Virginia Energy Research and Development Authority.

"Ensuring that storage technology providers can participate in wholesale electric markets and be properly compensated for the value they bring, as well as their environmental benefits, requires complex legal guidance," said Elizabeth McClanahan, dean of the Appalachian School of Law, which she said will assist the partnership in navigating rules from the Federal Energy Regulatory Commission, the Regional Transmission Organizations and state agencies.

Likewise, Mountain Empire Community College will help the partnership address workforce development considerations. "Pairing private industry with K-12 and higher education interests in the pursuit of energy storage technology will be a game-changer for our region," said college President Kris Westover, who is also vice chairman of the Southwest Virginia Energy Research and Development Authority.

Republican Terry Kilgore, a member of the Virginia House of Delegates who represents District 1, said the partnership with Appalachian Power and Dominion Energy allows the region to connect research and economic development to drive energy innovation in Southwest Virginia. "We should take an all-of-the-above approach to keep Southwest Virginia in a lead position," he said.

https://dailyenergyinsider.com/featured/27525-electric-companies-team-up-on-virginia-energy-storage-partnership/

Power companies partner up

By Charles Booth
Bluefield Daily Telegraph
October 19, 2020

As Dominion Energy continues to evaluate whether a $2 billion renewable energy project will come to Tazewell County, the company is also partnering with Appalachian Power (AEP) and InvestSWWA to advance energy storage technology in Southwest Virginia.

Dominion and AEP announced the partnership last week, and it also includes also the Appalachian School of Law, Mountain Empire Community College and the Southwest Virginia Energy Research and Development Authority.

"As a leader in renewable energy, we are excited by the opportunity and potential this presents to further diversify our energy mix," said Chris Beam, Appalachian Power President and Chief Operating

Officer. “Last year, Appalachian produced approximately 2,400 gigawatt-hours of energy from wind- and hydro-power and as our investment in renewables grows, so will our need for energy storage.”

“With the greater proliferation of renewables, energy storage expansion will be a vital component in providing stability to our grid and support our customer’s needs,” Ed Baine, President of Dominion Energy Virginia, said in the announcement. “Dominion Energy looks forward to working with our partners to support economic development in Southwest Virginia, which has long served as Virginia’s energy corridor.”

Both Appalachian Power and Dominion Energy’s efforts in energy storage are bolstered by the Virginia General Assembly’s Grid Transformation & Security Act of 2018 and the Virginia Clean Energy Act of 2020. In addition, both companies are focused on how energy storage can maximize the impact of solar energy generation.

Dominion said its solar fleet is currently the third-largest among utility holding companies in the nation and will build the largest offshore wind project in North America off the coast of Virginia Beach.

The company is also looking for new and innovative ways to store the renewable energy it produces to maintain reliable service to customers, including the coming construction of four Central Virginia energy storage projects recently approved by the State Corporation Commission.

The Tazewell County project, a pumped storage facility, if eventually given the green light, will be built on the south side of East River Mountain just a few miles west of Bluefield and would compliment the Bath County Pumped Storage Station described as the “largest battery in the world.”

Two reservoirs are used, on at the top of the mountain and one at the bottom, to generate electricity on demand by releasing water down tunnels to provide the power to rotate turbines in a powerhouse at the lower reservoir. Water is then pumped back to the upper reservoir.

Dominion has been evaluating the project for over two years to see if it is feasible. If given the green light, it would provide 2,000 construction jobs and take a total of about 10 years to be up and running.

Appalachian said in the announcement it has in recent years expanded its portfolio to include more renewables, and will use its expertise to research ways energy storage can improve electric reliability for customers and attract new business and industry to this region.

Under the Clean Energy Act, Appalachian Power is committed to providing customers with at least 600 megawatts of solar generation in Virginia by 2030. The company has signed contracts for 55 megawatts of solar, and earlier this year issued a request for proposals (RFP) for up to 200 megawatts of solar energy resources to include solar and an option for a battery storage system. Appalachian Power is currently in negotiations with developers on the proposals received through the RFP process.

Dominion Energy Virginia's most recent long-term forecast calls for approximately 16,000 megawatts of solar in the state over the next 15 years to meet customers' energy needs.

Coalfield Strategies, LLC, a one-stop economic development firm driving new business investment to Southwest Virginia, will coordinate on-the-ground efforts with both utilities. The firm leads InvestSWVA, a public-private business attraction and marketing campaign launched under the umbrella of the Virginia Tobacco Region Revitalization Commission, in addition to project development efforts for the Southwest Virginia Energy Research and Development Authority.

According to the announcement, Coalfield Strategies will use recently completed market research and key site data collected from its portfolio of energy projects to define why the region is attractive to the energy storage industry.

"Virginia's utilities are best positioned to drive the development and deployment of energy storage technology," said Will Payne, Managing Partner of Coalfield Strategies and InvestSWVA lead. "Our team is excited to work with Appalachian Power and Dominion Energy in attracting industry prospects to Southwest Virginia, and we have assembled partners that demonstrate the region's desire to redefine itself as the energy innovation capital of the East Coast."

Coalfield Strategies will continue to collaborate with the Virginia Department of Mines, Minerals and Energy, given the agency's expertise in the region's assets, including land, power and water. The firm will also tap two key statewide authorities in order to leverage industry relationships and expertise, including the Southwest Virginia Energy Research and Development Authority and the Virginia Solar Energy Development and Energy Storage Authority.

"Southwest Virginia is poised to drive energy storage technology development, and we are looking forward to working hand-in-hand with Appalachian Power and Dominion Energy to bring the region together around this opportunity," said Mike Quillen, Chair of the Southwest Virginia Energy Research and Development Authority. "Our team is going to think creatively and strategically on how to pair renewable energy generation with job-creating projects."

The announcement said energy projects to help establish the region's credibility in attracting renewable, clean and zero-carbon projects include:

- Project Innovation is developing the Southwest Virginia Energy Research Park, a first-of-its-kind operation in the United States that will host companies and entrepreneurs interested in proving and eventually commercializing their technology.
- Project Energizer explores using pumped-storage hydro technology on a small, affordable scale and provides an opportunity for Southwest Virginia to leverage its topography as a competitive advantage.
- Project Oasis highlights Southwest Virginia's foothold in out-of-the-box thinking with the use of geothermal cooling technology with the billions of gallons of water collected in underground mines as a significant energy and cost-savings tool, not only for data centers but also for any industrial operation requiring robust power and water.

These projects benefit largely from the region's considerable inventory of reclaimed surface mined properties plus adjacent underground mines. Congressman Morgan Griffith (R–VA9), a member of the U.S. House Energy and Commerce Committee, has led efforts to secure over $30 million in funding from the U.S. Office of Surface Mining's Abandoned Mine Land Pilot Program to support land reclamation and economic development activities throughout the region. This funding will continue to play a strategic role in marketing Southwest Virginia as a leader in the new energy economy.

"Energy has been central to Southwest Virginia's past, and this announcement shows how important it will be to Southwest Virginia's future as well," said Griffith. "Energy storage technology can make use of our existing assets to create jobs and power industries in the region."

The Appalachian School of Law will lend its extensive educational and legal expertise in energy storage incentives around the country, the Federal Energy Regulatory Commission's new energy storage rule, and how energy storage is credited in the Regional Greenhouse Gas Initiative market Virginia appears poised to enter.

This partnership aligns with the goals of InvestSWVA's legislative co-chairs when they created the Southwest Virginia Research and Development Authority during the 2019 General Assembly session.

"Southwest Virginia is a prime location for energy research and development activities that leverage our region's talent and natural resources," said state Sen. Ben Chafin. "Our legislative delegation is committed to seeing the region build on its long history of energy generation in order to grow our economy."

"Partnering with Appalachian Power and Dominion Energy allows the region to connect research and economic development in order to drive energy innovation in Southwest Virginia," said Delegate Terry Kilgore. "We should take an all-the-above approach to keep Southwest Virginia in a lead position."

"Our region offers the energy storage industry a strategic location to not only research and prove technology but also manufacture it," said Delegate Israel O'Quinn. "Southwest Virginia has the assets, workforce and incentives that are critical to attracting innovators and entrepreneurs."

"The value of this partnership is a coordinated effort between Virginia's largest utilities and the various economic development, workforce and policy leaders across the region," said Senator Todd Pillion. "We are committed to leveraging our relationships in order to aggressively pursue energy storage technology development and manufacturing opportunities in Southwest Virginia."

An attempt is also under way to take advantage of solar energy for public schools, asking Appalachian Power to allow fair access to solar energy in the company's Southwest Virginia territory, an announcement from Appalachian Voices said last week.

The Wise County and Tazewell County school boards voted unanimously last week to pass resolutions calling for fair financial mechanisms that would enable them to install solar at their schools, which would ultimately save the school systems thousands of dollars.

"Over the past couple of weeks, we've had several citizens reach out to us and ask us to support a resolution in support of equal access to solar," said Dr. Christopher Stacy, Tazewell County Public Schools Superintendent.

The announcement on the request also said the Town of Blacksburg, Carroll County Public School Board, Carroll County, and Pulaski County officials have sent letters also calling for equal access to solar.

Schools across the region have pursued solar projects in recent years,

However, the announcement said, Appalachian Power currently limits net metering for local government, effectively blocking power purchase agreement (PPA) financing for these same customers.

Net metering allows a customer to send electricity from their solar panels onto the grid, offsetting their electric bill, the announcement said. Under a PPA, a third-party developer owns, operates and

maintains a solar system on behalf of a customer. These programs are crucial tools for financing solar and reducing the up-front cost of a new installation, which can be a barrier for customers, particularly tax-exempt and public entities.

The resolutions and letters come as a steering committee of the Appalachian Power Virginia Municipal League and Virginia Association of Counties begins negotiations with APCo to update the rates and services provided to local government or "public authority" entities in Southwest Virginia. Contract negotiations are expected to continue over the next few months.

"Schools and local governments in other parts of the state are taking advantage of solar energy to save taxpayer money. These tools can be of significant value to Southwest Virginia, which has powered our state and country for more than 100 years and is now struggling as we undergo an energy transition," said Austin Counts, New Economy Field Coordinator for Appalachian Voices, which helped inform the school and government entities about the issue.

https://www.bdtonline.com/news/local_news/power-companies-partner-up/article_20dc6b17-268e-5fd7-8b4a-9d9c2b0b2679.html

Editorial: Southwest Virginia's unique pitch for data centers

By Alexa Welch Edlund
Richmond Times-Dispatch
October 20, 2020

he most fascinating thing we've read lately isn't on The New York Times bestseller list.

It's a document that otherwise would cause eyes to glaze over — an economic development report on whether Southwest Virginia would be a good place to locate data centers, the massive warehouses of computer servers that make online traffic go.

Spoiler alert: The answer is yes, but the most remarkable part is how the report arrived at that conclusion.

The report — prepared by a consultant for the InvestSWVA economic development group under the code name "Project Oasis" — proposes that the coalfields tout their potential for renewable energy.

Yes, you read that right: A region historically known for fossil fuels is being urged to do a 180 and instead promote itself as a vast storehouse of renewable energy.

The essence of this report goes like this: Data centers are energy hogs. That's why data centers like renewable energy so much — it's becoming cheaper than coal-fired electricity. Data centers also generate a lot of heat, so they require a lot of water for cooling — something on the order of 236,000 gallons per day. That's where Southwest Virginia has a unique selling point. It's sitting on top a lot of former coal mines that have been flooded. You can't use that water for drinking, but you sure could use it for cooling.

The report identified at least six sites in Southwest Virginia that appear to meet the criteria necessary for data centers — lots of land, easy access to the power grid, broadband internet nearby. Three of those are outside coal country — in Carroll, Washington and Wythe counties. The other three are in coal country — Dickenson, Scott and Wise counties. Two of those sites, in Dickenson and Wise, directly are over top of mine pools. The third, in Scott, is a former limestone mine with a cavernous hall where the temperature constantly is 52 degrees and potentially could be developed in a way that provides natural cooling. That's not unheard of — there already is one site in Pennsylvania that uses an underground limestone mine for a data center. Think "computer cave."

The report goes on to say that using mine water (or, in Scott, a dry mine) for cooling "could reduce the electricity required for cooling the data center by 90%" as well as eliminate the need for buying municipal water. The bottom line: "The annual savings would be over $1 million annually." Would the prospect of shaving $1 million off the expense line be enough to lure data centers to the coalfields?

Far Southwest Virginia already has three data centers — in Scott, Russell and Wise counties. That's not much compared to Northern Virginia's "Data Center Alley" that has at least 118 data centers in Loudoun and Fairfax counties alone, but it's more than Roanoke, which just has one. In any case, it's something to build on and represents a high-growth sector that Southwest Virginia is trying to latch onto. The number of jobs per data center are relatively small, about 40, but 40 jobs in a rural county mean a lot more than 40 jobs in Northern Virginia. These also are well-paid jobs — some salaries top out at $120,000 or more, or about four times the median household income in Dickenson County. No wonder that some counties in the region now are looking at setting a special low tax rate for property taxes on data centers. These are jobs the region desperately could use. This is a serious push, one that might take years to play out, but one that holds the potential to help reinvent the region's economy.

It also requires the interest and cooperation of tech companies that — for all their talk about "innovation" and "disruption"— often are myopically focused on the places they know best. And that's not the heart of Appalachia.

That's why this is such a fascinating report. It's in the form of a feasibility study but really offers a way to speak to two different audiences. First, it offers up talking points for a sales pitch to those tech companies — Southwest Virginia has some unique, environmentally friendly ways to help save you energy and cut costs. Second, it delivers a message to the region that it needs to present itself in a different way. The report says Southwest consistently should talk up the "region's desire to transform itself from a coal producing area to an innovative renewable energy hub." It's unclear just how widespread that desire really is — this is not a part of the country where "the Green New Deal" is considered a good thing — but the desire for new jobs certainly is strong. That's where data centers become an interesting place to start a different conversation. Data centers — lured by the promise of reduced cooling costs from water down in the mines but that still would demand lower-cost electricity — could jump-start the demand for renewable energy in a part of the country that until now has seen green energy as the enemy.

https://richmond.com/opinion/editorial/editorial-southwest-virginias-unique-pitch-for-data-centers/article_f63fd0e0-398d-5db7-9b02-79245b63879c.html

OPINION: Southwest Virginia is perfectly primed for new data centers

Washington County News
October 21, 2020

There's some potentially good news on the job front for Southwest Virginia as a new study shows the region has exactly what it takes to attract data centers that could provide well-paying positions.

As the mountain areas struggle to replace jobs lost to the declining coal industry, economic development specialists have been touting two potentially large new job sources: tourism and data centers.

Tourism is, of course, a no-brainer, as our Southwest Virginia topography, including our beautiful mountains and clean, scenic rivers, are natural draws for visitors from outside the area — providing that we develop the resources to accommodate them.

Data centers should also be seen as a good fit for the region, and the new study — conducted on behalf of GO Virginia Region One and funded by its InvestSWVA public-private marketing initiative — validates that idea.

Will Payne, managing partner of Coalfield Strategies and project lead for InvestSWVA, said the study shows the region is a "prime location" for data centers.

Data centers could be especially attractive, as the study's analysis suggests that even just one large center could bring nearly 100 permanent jobs and more than $50 million in annual economic benefit, according to a recent story in the Washington County News.

There also is the potential of up to 2,000 temporary jobs during construction of each center, bringing about $233 million into the local economy, the study said.

Southwest Virginia has a number of specific assets that could prove valuable in recruiting data centers to the area, the study found.

It concluded that our region could "become a location of choice for data centers based on power and broadband infrastructure and the availability of geothermal cooling technology with the billions of gallons of water collected in underground mines as an energy and cost-savings tool," according to a written statement.

Availability of land and a ready workforce also were identified as key assets.

Surprisingly, some of the region's abandoned mine sites could provide some of the necessary resources to accommodate the operations of large data centers, the study said.

"Reinventing our economy can include reusing our existing infrastructure," U.S. Rep. Morgan Griffith, R-9th, said in the statement.

"The water pooled in abandoned mine sites could serve industrial operations requiring substantial water use, such as data centers," he said. "This innovation would be a way to draw economic opportunities to Southwest Virginia."

The study also identified six potential sites for larger data centers.

They include the Oak Park Center in Washington County; Lonesome Pine Regional Business and Technology Park in Wise County; Progress Park in Wythe County; Red Onion industrial site in

Dickenson County; the Sunbright mine site in Scott County; and Wildwood Commerce Park in Carroll County, the story said.

In addition, four other locations were mentioned as possibilities for smaller centers, including the Bluestone Regional Business and Technology Center in Tazewell; Southern Gap Business Park in Buchanan County; Project Intersection in Norton; and a Tennessee Valley Authority-certified site in Scott County.

“Local, state and federal leaders have been working tirelessly to attract economic development to Southwest Virginia, and data centers are a hot topic as we look to bring more jobs here,” state Del. Israel O’Quinn, R-Bristol, said in the story.

“Data centers provide a unique opportunity to modernize our economy, bring 21st-century jobs to our region and leverage some of our strongest assets, including land and sustainability,” he added.

Now that these assets have been identified and verified, it’s up to our regional governments and economic development leaders to move forward in sharing what Southwest Virginia has to offer with those who can make these data centers happen.

The time is ripe, and the need is real.

https://swvatoday.com/opinion/article_e35cf527-8018-5705-a4a3-e4d7e47a25be.html

Can Southwest Virginia win the data center game?

By Mason Adams
Virginia Business
November 29, 2020

Like many other parts of the commonwealth, Southwest Virginia is making a play to attract data centers, offering cheap land, available workers and a natural cooling system.

Data centers aren’t huge employers but do offer high wages and significant tax revenue — which other regions in Virginia have taken full advantage of, particularly Loudoun County in Northern Virginia.

A study conducted by Richmond-based OnPoint Development Strategies and released in October by regional marketing group InvestSWVA concludes that the region could produce 2,000 jobs and $50 million in annual revenue if it becomes a destination for data center investment.

But with more localities looking to cash in on data centers, can Southwest Virginia compete?

“Data center site selection is an increasingly competitive process, and large operators have more options than ever before as more locations become aware of the economic benefits of data centers,” says Rich Miller, founder and editor of Data Center Frontier, a trade publication.

The data center initiative, called Project Oasis, hopes to leverage vast underground pools of water in former coal mines as a significant energy and cost-savings tool to entice companies looking to save money on cooling their data centers.

Miller says Project Oasis “could be intriguing to some large operators — if supported by other initiatives.”

The study acknowledges the region’s challenges, including a smaller, less educated workforce and the lack of a local property-tax and depreciation structure designed to encourage data center investment. Also, the region lags behind more populous regions in broadband connectivity, although more fiber-optic lines are currently being added.

Will Payne, director of InvestSWVA and managing partner of Coalfield Strategies, says local counties are poised to change their tax structures, and the University of Virginia’s College at Wise and community colleges can provide training for most data center jobs.

“We see our competition not as Northern Virginia but Central Virginia,” Payne says. “Southwest Virginia may not be for every data center, but it is the right location for the right data center, especially someone focused on leveraging the region’s solar and geothermal assets to deliver on their sustainability goals.”

“There are a lot of eggs in that Northern Virginia basket,” says Kent Hill, managing principal of OnPoint Development Strategies. “There does need to be some diversity and backup for those facilities. We see that as a niche for Southwest Virginia.”

https://www.virginiabusiness.com/article/can-southwest-virginia-win-the-data-center-game/

For more protection, some data centers are headed underground

By Annie Gaus
Bisnow
December 11, 2020

Underground data centers may call to mind ultra-secure, massive government facilities like Cheyenne Mountain Complex in Colorado, a bunker complex built under 2,000 feet of granite that hosts defense intelligence and operations, built to withstand a nuclear blast.

Of course, few organizations need quite that level of security. But with extreme weather events growing more common — floods, severe storms and other disasters have all accelerated over the past several decades, causing trillions of dollars in economic damage — underground data centers present unique advantages for a certain type of customer.

A handful of colocation firms, such as Boston-based Iron Mountain, have offered underground data center space for some time. Built in a limestone mine, Iron Mountain's underground data center sits in Boyers, Pennsylvania, and offers 333K SF and 40 megawatts of total potential capacity as part of a larger 200-acre colocation campus. Other parts of the country with similar geological properties see an opportunity to build data centers in unused mines.

"Aside from being absent of weather, which manifests in a very reliable data center, some customers are looking for — you can call it security — but really it's a low range of operational risks," said Todd Murren, general manager of Bluebird Underground, which operates an underground data center in Springfield, Missouri.

Located 85 feet underground and surrounded by limestone rock, Bluebird Underground, which is part of BlueBird Network, touts protection from the elements alongside a fire protection system and tight security, all but eliminating the risk of a "black swan" disaster event wiping out troves of vital data.

That's no hypothetical: In March 2020, a tornado tore through the Nashville area, wiping out out the IT and hosting systems of the national trucking firm Western Express. (The company had backups of critical systems and was able to recover its data.) Disaster events can harm any type of business, but there are some sectors with heightened reliability and compliance needs: finance, health care and government.

"It doesn't matter what business you're in: Utopia is being in an environment with no risks," Murren added.

Many of the perks of underground data centers are innate to the environment itself.

Temperatures underground are tepid, stable and predictable year-round, making underground locations potentially more manageable to cool. In southwest Virginia, a group of local officials developed an innovative proposal: using old mines, which have gone unused for years and are now flooded, as data center cooling systems. Southwest Virginia gets more rainfall than it does evaporation, giving it unique geothermal properties — and with that, unique development potential.

“We have hundreds of inundated mine cavities ... they’re enormous water resources,” said Will Clear, a director at the Virginia Department of Mines, Minerals and Energy. “The concept is that most of that mine water is anywhere from 300 to 800 feet deep, maybe a little deeper, and maintains a constant temperature of 51 or 52 degrees. You can circulate a limited amount of water to cool a data center.”

As part of an initiative called Project Oasis, which kicked off last year, the regional economic development group InvestSWA identified six sites suitable for a 36 MW, hyperscale data center, and four additional sites suitable for a smaller data center of up to 10 MW. The mine-water cooling system would save more than $1M annually in electricity costs and municipal water purchases, the group estimated.

Will Payne, director at InvestSWA and managing partner at Coalfield Strategies, sees Project Oasis as a strong complement to Northern Virginia’s data center presence. Loudoun County, Virginia, colloquially referred to as Data Center Alley, is the largest data center region in the world. Southwest Virginia, meanwhile, could host smaller and more specialized data centers primed for use by national security agencies or other customers with high reliability demands.

“We have great assets: power, land and water, and with this Project Oasis technology we think we can save data centers significant municipal water and energy costs and help them achieve their sustainability goals,” Payne said.

https://www.bisnow.com/national/news/data-center-bisnow-national/for-more-protection-some-data-centers-are-headed-underground-107053

Editorial: Three big stories in 2020 that didn't get the attention they should have

The Roanoke Times

December 28, 2020

As hard as it is to believe, other things happened this year besides politics, protests and the pandemic.

Here are some of the biggest stories of the year that you may have missed. They may not have gotten as much attention in 2020 as they deserved, but the odds are high that someday we'll look back and mark 2020 as a turning point in ways we don't realize now.

1. The auto sector in the Roanoke and New River Valley continued to grow. Torc Robotics, the Blacksburg-based developer of self-driving systems, doubled the size of its headquarters, then promptly announced in August that it planned to create 350 new jobs (on top of the 175 it already had). Then in October the company announced it's setting up a test center in Albuquerque, New Mexico, where it's been testing some of its self-driving trucks. Meanwhile, Mack Trucks opened a truck factory in Roanoke County that's expected to employ 250.

New jobs are always a big deal in this part of Virginia, especially good-paying ones. Here's why these two announcements — especially the Torc one — is even more important: What we're seeing here is the birth of an entirely new economic sector. We write a lot about communities outside the major metros need to create a new economy. Well, this is part of that new economy being created right here. The Roanoke and New River valleys have long had a stake in the automaking business, from supply chain companies such as Metalsa in Botetourt County to actual vehicle construction at Volvo in Pulaski County. That sector has been growing: the Eldor Corp. auto parts plant opened in Botetourt in 2018, Metalsa added jobs last year. Now we're seeing more growth with Torc and Mack.

All these are connected: Each of the trucks that will be produced at the new Mack plant will include parts from Metalsa. Torc Robotics is helping create technology that extends beyond a single company. This is technology that will revolutionize the industry. Meanwhile, the Virginia Tech Transportation Institute — which is involved in a lot of that next-generation research — has grown to become the second-largest university-level transportation institute in the U.S. Today the institute has 520 employees, making it a significant employer in its own right. The institute draws in more than $50 million in sponsored research each year, with more than 300 active projects. This year it opened a test track on the Smart Road that will be the nation's first test track focused on rural road conditions for autonomous vehicles.

Before the pandemic, officials at the Roanoke-Blacksburg Regional Airport marveled at how many passengers they see coming from Detroit — auto company officials coming to see what's happening

here. The Roanoke and New River valleys will not become the next Detroit but we are on our way toward becoming something else.

Irony: Many of the communities in this part of Virginia voted heavily for Donald Trump, but a Joe Biden administration is likely better for the region's evolution into a transportation center. Trump had ridiculed self-driving vehicles as "crazy" and something that "will never work." Joe Biden says he wants to give a presidential push toward more research into new technologies. S&P Global, a research arm of the Standard and Poors financial firm, advised investors before the election that "a Joe Biden presidency would give the auto industry a more stable future focused on forward-looking technology like electrification and autonomous driving."

2. Renewables such as wind and solar produced more energy than coal for the first time in the U.S. since before the industrial revolution. Actually, this happened in 2019 but wasn't announced until the U.S. Energy Information Administration compiled the figures this year. Natural gas passed coal to become the nation's biggest source of energy back in 2016. Even though Trump vowed to "bring back coal," the free market had other ideas during his term. In 2020 we saw coal fall to fourth place as a source of power behind natural gas, renewables and nuclear. That has obvious implications for Southwest Virginia, where much of the economy has been based on coal and, in the case of the railroad through Roanoke, hauling that coal. This isn't some passing trend; this is a historic transformation in where our energy comes from. Of the new energy projects announced in the U.S. 2020, 76% of the new capacity will be from renewables.

Here's another example of that transformation: The Richmond-based Dominion Energy now says it's the third-biggest solar-powered utility in the country. Dominion announced nine new solar projects in 2020, plus plans for what would be the largest offshore wind project in the United States. Utility Dive, a website that covers electric utilities, writes that "prodded by state legislation and customer demand, Dominion is embracing the transition to clean energy." The key phrase there may be "customer demand." The free market is driving a lot of this. Technology companies, in particular, are demanding green energy and companies of all sorts want cheaper power and the price of renewables has been falling. There's still coal being mined, of course much of it for export, because India and China remain voracious consumers. Still, the domestic market is dying, which means those coal communities need to adjust themselves to new economic realities. Can they figure out how to grab a piece of the renewable energy market, or will they let that opportunity pass them by?

3. A push began for data centers in Southwest Virginia. Right now, Northern Virginia, particularly Loudoun County, is the nation's "Data Center Alley." A study produced for the InvestSWVA economic development group made a case for why the coalfields are uniquely suited for data centers the vast warehouses of computer servers that make the internet "go." Computers generate lots of heat, which

means the buildings have to be cooled. Old mines are naturally cool and some have reservoirs of water that can be used. The report makes the case that using mines or mine water for cooling "could reduce the electricity required for cooling the data center by 90%" as well as eliminate the need for buying municipal water. The bottom line: "The annual savings would be over $1 million annually." Would the prospect of shaving $1 million off the expense line be enough to lure data centers to the coalfields? We don't know, but if so, that could help jump-start a technology hub in the heart of Appalachia.

https://roanoke.com/opinion/editorial/editorial-three-big-stories-in-2020-that-didnt-get-the-attention-they-should-have/article_0d45a848-2528-11eb-93da-c3645ede7e43.html

Editorial: Ben Chafin's legacy

The Roanoke Times
January 5, 2021

If you've somehow made it this far through the pandemic without knowing anyone who has passed away due to the virus, now you do.

State Sen. Ben Chafin, R-Russell, passed away Jan. 1 due to complications from COVID-19. He was 60 and just a few weeks ago was a healthy, vital man taking part in the General Assembly's prolonged special session. This virus is a cruel thing, passing over some, sickening others only mildly, but then striking down others for apparently no reason.

While you may not have known Chafin personally, if you have even a passing interest in Virginia politics, you know his name and you know his work — work that will outlive him.

Chafin was the personification of the realignment of politics in Southwest Virginia or, more broadly, America at large. The districts he represented — first in the House of Delegates, later in the state Senate — had long been Democratic strongholds back when it not unusual for Democrats to represent rural areas.

Joseph Johnson, a Democrat from Abingdon, spent 22 years representing the district — running unopposed every time. When Johnson retired in 2013, Chafin succeeded him as a Republican — and Chafin had no opposition.

The next year, when a state Senate seat unexpectedly came open, Chafin ran in the special election. That was a district that had been held by Democrats since 1975. Chafin won with 59.6% of the vote and was reelected twice more by even wider margins — and never faced a Democrat on the ballot the last two times.

Chafin was as politically secure as an officeholder can be. Were it not for this vicious virus, Chafin likely could have served however long he wished. Politically, his threat was never from Democrats but from demography, and the threat that the next redistricting might squeeze a Senate seat out of Southwest Virginia and transfer it to more populous Northern Virginia. Already the district Chafin represented was a massive one, stretching from the Kentucky line into Montgomery County — geographically bigger than many congressional districts.

Many political obituaries called attention to Chafin's strong support for the rights of gun owners, which liberals might not think is much of an accomplishment, but which put him in perfect harmony with the vast majority of his rural constituents. Chafin's most consequential vote might have been in 2018 when he was one of four Republicans who broke party ranks to expand Medicaid — one of those career-defining "profile in courage" moments. Chafin famously said then: "I came to the conclusion that 'no' just wasn't the answer anymore, that doing nothing about the medical conditions, the state of health care in my district, just wasn't the answer any longer." Republicans who still grumble about Medicaid expansion would do well to remember what Chafin said then. We'll never know the numbers, but surely there are some Virginians alive today who wouldn't be if it hadn't been for that vote.

Chafin has a claim to another legacy, one that's not as dramatic but someday might be just as transformative. He was one of several Republican legislators in Southwest Virginia who took a more hands-on approach to economic development than legislators are normally expected to take. More specifically, along with Del. Terry Kilgore of Scott County, Del. Israel O'Quinn of Washington County and state Sen. Todd Pillion of Washington County, he was instrumental in forming the InvestSWVA group that has set its sights on trying to win a share of the technology economy for Southwest Virginia. Some may scoff at that — we hear regularly from some of those skeptics — but if the effort succeeds, Chafin will deserve some of the credit. This is the Wayne Gretzky approach to building a new economy in a part of the country that desperately needs one: "You miss 100% of the shots you don't take."

Here's another profile in courage: Chafin represented the heart of Virginia's coal country, but in trying to reposition the region as "the energy innovation capital of the East Coast" — to use InvestSWVA's words — that implicitly put him on the side of promoting the coalfields as a future site

of renewable energy. If there's ever an opportunity to name a business park in the region, naming it after Chafin would be a very appropriate way to memorialize his service.

That's for another day, a better day that we hope is coming. Today it's worth remembering this: On the day that Chafin passed away, he was one of at least 1,917 Americans who succumbed to COVID-19. The next day the number was up to 2,373 — and all those numbers will likely grow as more data trickles in. The highest daily death toll came on Dec. 30, when 3,808 Americans died due to the virus, according to numbers compiled by The New York Times. For comparison purposes, 2,977 people died in the terrorist attacks of Sept. 11, 2001, and 2,403 perished at Pearl Harbor. We are now living through a Sept. 11 or a Pearl Harbor almost every day. We just experience it differently because we don't see photographs of burning buildings or Navy vessels, but far too many families are still living through their own private horrors. Sometimes those individual deaths even make their way into the news when the virus fells someone of public stature, as it did with Chafin, or with Luke Letlow, the 41-year-old congressman-elect from Louisiana who died Dec. 29, both cases that underscore the virus' lethality isn't confined to the old or the infirm.

We must remember this: Right now, the United States — the world's most advanced nation — has the world's highest infection rates. The World Health Organization on Monday listed our infection rate at 61,204 cases per 1 million people. By contrast, the two countries next door, Canada and Mexico, are running rates of 15,709 and 11,196. Why is this? Chafin's home county of Russell County is running a rate that almost matches that incredibly high national average, and there are some parts of Virginia even higher — Bland County, Lee County, Smyth County and Tazewell County in Southwest Virginia; Emporia, Greensville County, Martinsville, Nottoway County and Sussex County in Southside County; Richmond County on the Northern Neck and Harrisonburg in the Shenandoah Valley. That means they all have some of the highest infection rates in the world. We ask again: Why is this?

Today we mourn the passing of a man in whom voters placed their trust, but we also must mourn the passing of many others whose names will never make the newspaper unless it's an obituary.

https://roanoke.com/opinion/editorial/editorial-ben-chafins-legacy/article_b7cd6e5e-4eb3-11eb-b646-bf6aef8a39a6.html

Legislators seek strategies to lure data centers to Southwest Virginia

By Amy Friedenberger
The Roanoke Times
January 23, 2021

It's pitch black and silent a few hundred feet underground this tomb-like mine shaft. There's no breeze, but it's cool.

Besides some troublemakers who have broken through the chains on the gate, it's hard to locate the entrance to this mine off a road in Scott County. The limestone mine is empty. It's cavernous and the ceiling is high — no need to duck walk. A pickup truck could drive through some parts. In certain rooms of the mine, a two-story house could fit into it.

"That's what makes this so valuable," Rep. Morgan Griffith, R-Salem, said while on a 2019 tour of the mine. "The space, the privacy."

Some economic development and mining industry leaders think they've come up with an idea of what to do with mines like these that are empty but still full of potential.

They want to put data centers in them. And those who work in the energy and technology industries say they think Southwest Virginia has an opportunity to leverage its natural resources in a way that makes the region a promising location for future data centers.

"The infrastructure that we have, including land, power, broadband, water assets and geothermal cooling technology, make the region a strategic location for data centers," said Del. Israel O'Quinn, R-Washington. "We can do something here no one else in Virginia can do."

Attracting data centers to Southwest Virginia is one of the goals of InvestSWVA, a marketing initiative that launched over a year ago to attract economic development projects to the region.

Data center companies typically build and operate nondescript buildings that house generators and racks of computer servers storing and processing information for tenants like Facebook, Microsoft and Amazon. Too keep machines from overheating, data centers have cooling systems that contribute to a massive consumption of energy.

As data centers look to reduce their carbon footprints and seek renewable energy sources to power their facilities, this is where mines like the one in Scott County can be useful. The temperature of the mine will stay constant at 55 degrees. There's about a 2-acre lake at the bottom of the mine. The goal is to build a system so the water can be used for cooling the data center, which would significantly reduce operational costs.

"Our mines have made Southwest Virginia nature's refrigerator," Griffith said.

The idea is to line the walls of the mine with racks and racks of blinking computer servers.

This mine is just one of six sites that a firm hired to study this initiative have found meet the criteria — including internet connectivity, cost and availability of electricity, and business climate — to support large data centers. Another four sites could be suited for a smaller data center.

“We’ve got a real opportunity to reimagine our economy,” said Mike Quillen, a former coal executive and current chairman of the Southwest Virginia Energy Research Authority, which is focused on promoting new energy development in the region once known for its booming coal industry.

Far Southwest Virginia already has three data centers — in Scott, Russell and Wise counties — and there are more than a dozen others scattered across the commonwealth outside of Northern Virginia.

Northern Virginia is the national hub for the data center industry. Data centers bloomed there because of the relatively low power rates, a highly educated workforce and nearby customers, like the federal government. Their centers’ proximity to its customers helps shave off milliseconds from the time they take to transmit data.

The pandemic has shifted more and more work and play online, which means businesses and people are gobbling up more data. The need for more data capacity has been a boom for the data center industry.

“As that occurs, you’re seeing a lot more positioning between states and localities across the country in trying to draw more data center investment and jobs,” said Josh Levi, president of the Data Center Coalition, a Northern Virginia-based trade association for the data center industry.

The General Assembly is considering a couple bills intended to incentivize more growth of data centers in Virginia, and the further expansion of them into regions like far Southwest Virginia. They would loosen guidelines around the sales and use tax exemption to encourage companies to build data centers in economically distressed areas.

Sen. Jeremy McPike, D-Prince William, is patroning one bill to do this along with a bill to eliminate the coal tax credits aimed at boosting coal mining in Virginia. The Joint Legislative Audit and Review Commission, the legislature’s oversight commission, issued a report last year recommending the elimination of the coal tax credits because they are one of the state’s largest incentives to promote business growth, but have generated economic losses for the commonwealth.

"We really want to look at the ways we invest our dollars when investing, and if we're going to eliminate the coal tax credits, we also want to find ways to invest and focus our efforts on Southwest and Southside Virginia in the distressed areas," McPike said. "If we're going to phase out one tax credit, we need to retool and figure out how to invest wisely."

Virginia first adopted its tax exemption for data centers in 2008. Tax exemptions have become highly influential in attracting data centers, with states — 33 of them — and even localities offering more competitive incentives. Several Virginia localities have lowered their taxes on equipment. Some localities in Southwest Virginia are working on establishing a competitive sales and use tax rate for data center equipment.

"Tax policy is one area where lawmakers can move the needle quickly," Levi said. "And the more Virginia localities can increase their competitiveness is good. But I don't believe Virginia localities are competing against one another, rather it's more they are competing with other states."

States view data centers as attractive industry because they require a lot of initial investment and additional investment over time to replace equipment. While data centers don't yield many jobs after construction is complete, they are a valuable source of revenue with property taxes.

McPike's bill, and another from Sen. Frank Ruff, R-Mecklenburg, are trying to address the job creation threshold that data centers have to meet in order to qualify for the sales and use tax exemption. A JLARC study said that job creation requirement has been a barrier to data centers setting up in distressed areas because of a lack of workers with the necessary skills to work at these facilities.

McPike wants to eliminate the jobs threshold. Ruff wants to allow a data center company that met the job creation requirement to qualify for the sales tax in one locality to build a data center in another locality without having to meet the jobs threshold again. That would allow a situation like a data center company with facilities in Northern Virginia to more easily build another in Southwest Virginia.

Those working on luring a data center to far Southwest Virginia said tweaking the tax policy will be key in making the region more attractive.

"We want to pave the way for Southwest Virginia to be the next hub for data centers," O'Quinn said.

https://roanoke.com/news/local/legislators-seek-strategies-to-lure-data-centers-to-southwest-virginia/article_745f11f6-5c30-11eb-ae89-a366d61c219d.html#tracking-source=home-top-story-1

Op-Ed: Reinventing the SW Va. economy

By Will Payne & Todd Haymore
The Roanoke Times
January 24, 2021

Sixteen months ago we kicked off InvestSWVA, a business attraction and marketing initiative for Southwest Virginia, launched with the Virginia Tobacco Region Revitalization Commission and backed by the LENOWISCO Planning District Commission and private industry partners Point Broadband and Appalachian Power.

The initiative was born out of the region's senior legislators' desire to pilot whether a private entity could, on behalf of the entire region, attract unique economic development opportunities by leveraging relationships, generating high-quality leads, and establishing new strategic partnerships.

At our launch we announced a partnership with the Northern Virginia Technology Council to push the "future of work" by attracting and retaining young talent with a focus on high-tech and higher-wage jobs.

We named four legislators as our co-chairs — Del. Terry Kilgore, Del. Israel O'Quinn and Sen. Todd Pillion, and the late Sen. Ben Chafin — to use political heft to our advantage.

With a blank slate we created a new, disruptive model and sought key economic development partners like the Virginia Economic Development Partnership. VEDP and others are valuable partners because they know that, in today's economy, disruption is good.

A modern economic development operation requires an aggressive lead generation strategy, and it must be held accountable. As a private outfit, if we don't deliver, then we're fired. Our new approach has already yielded benefits.

We began by emphasizing Southwest Virginia's strategic advantages: quality of life, a dedicated workforce, affordable real estate, and availability of grant dollars to pair with private investment.

We use these advantages to sell executives unfamiliar with the region on opportunities. We reduce bureaucracy for the benefit of prospects, essentially becoming an extension of a company as it explores investing here.

We developed a roadmap for economic sustainability — a vision in which Southwest Virginia can be a home to high-tech companies looking to grow, a hotbed for energy innovation, a strategic location for advanced manufacturing, and a player in the craft beverage industry.

For each of these "big idea" areas, we've had significant wins with a shoestring budget and skeleton crew. We leveraged nearly $2.5 million in grants to support projects. More importantly, we found ways to keep projects moving during the pandemic. Here's a snapshot of our model in action:

We worked with highway guardrail manufacturer SPIG Industry on their decision to invest $7.9 million and create 113 jobs in Washington County.

We teamed up with Aldrich Capital Partners, a growth equity firm based in Northern Virginia and Silicon Valley, to explore expansion opportunities for its portfolio companies. That partnership has already led to 160 jobs in Scott County by Rochester, NY-based eHealth Technologies, the leading provider of medical record and image retrieval services.

We are building on Southwest's energy legacy while focusing on renewable, clean, and zero-carbon projects. Our goal is for the region to be the energy innovation capital of the East Coast by repurposing coal industry assets to develop a renewable energy park: a first-of-its kind operation that will host entrepreneurs and companies focused on commercializing their technology. Unlike traditional research parks, our land is the lab, giving Southwest a significant competitive advantage.

We led an effort to define Southwest Virginia's competitive advantage in the data center industry with the innovative use of geothermal mine water cooling and solar power to realize significant energy and cost savings. While Southwest Virginia may not be for every data center, it can be for ones focused on leveraging the region's topography and geography to meet sustainability goals.

We recently announced a partnership with Appalachian Power and Dominion Energy to advance the R&D, manufacturing, and deployment of energy storage technology in the region, and we have key public-sector partners like the Virginia Department of Mines, Minerals and Energy on board to provide expertise.

Recognizing a new agricultural market opportunity for Southwest Virginia, we are working with family farms to grow malting quality barley for the first time in the region, and we're marketing the "Appalachian Grains" brand to breweries and distilleries across the Commonwealth. Our related endeavors building a grain terminal to serve as a hub for the region's foothold in the craft beverage industry.

In each of these cases, we've brought together partners in workforce, government, and the private sector in order to close a deal. Those partnerships are vital, and they demonstrate why both collaboration and disruption are good. Above all else, our model has produced results. Results matter, and InvestSWVA's work has already resulted in new jobs, investments, and opportunities for the region, and we're just getting started.

https://roanoke.com/townnews/economics/payne-and-haymore-reinventing-the-economy-of-southwest-virginia/article_8d9d8ff8-55e1-11eb-86c4-7fe915ed6aa0.html

Reinvigorating Southwest Virginia's economy, from grain to data centers

By Mike Still
Kingsport Times News
February 28, 2021

Agriculture and coal have been staples of Southwest Virginia's economy for decades, and economic development officials in the region are looking at ways to use those longtime features in new ways to diversify and strengthen the economy.

While the Lonesome Pine Regional Industrial Facilities Authority has been most visible in the past year for developing a former surface mine site into commercial and industrial sites at a major transportation node in the region, the authority and development partnership InvestSWVA are looking at barley and former underground mines as resources for new takes on business growth.

LENOWISCO Planning District Executive Director Duane Miller and LPRIFA Coordinator Craig Seaver see grain agriculture as a way to take advantage of growth in the specialty brewing industry.

Miller said the authority's Project Thoroughbred has already seen success in helping some farmers in the Lee County area take steps to grow barley and specialty grains for brewing. In partnership with InvestSWVA's marketing support, the first batches of Appalachian Ale were unveiled in late 2020, and that will help in Thoroughbred's next step.

"With a revival of grain growing, we're looking at setting up a $2 million grain processing facility in the Wise County and Norton area," Miller said. "This will be a partnership between the authority, InvestSWVA and the Norton Industrial Development Authority."

The facility would give area grain growers a central site to bring crops without large transportation expenses, Miller said, and could take advantage of U.S. Route 23 and Route 58A for transportation to breweries in the region.

“The pilot grain project showed this could be done,” Miller said, “and it means opportunities for more farmers to grow barley and malt. The closest grain processing facility to this area is Louisville, Kentucky, so this will give growers here an advantage in lower transportation costs to get their grains to market.”

Seaver said Thoroughbred can tie into Mountain Empire Community College’s growing agriculture focus with its Smart Farming Center and small grains program to help area farmers take advantage of a new agricultural economy.

“It’s about reinvigorating agriculture and the economy,” Seaver said.

“From the idea to planting seed to processing to brewing a product in 12 months was a big success,” Miller said. “Now is a time to look at unique things to diversify the economy.”

While not exactly coal production, another of those “unique things” has been InvestSWVA’s efforts to position the region as a destination for data companies looking for less costly ways to establish new data server facilities.

Last year, InvestSWVA unveiled the result of Project Oasis: a list of sites offering a necessary and economic feature for facilities with masses of heat-generating servers and electronic equipment – geothermal cooling from underground mine water.

Six sites were listed as prime candidates for data center development in the Project Oasis report with three located within the LPRIFA service area:

- Lonesome Pine Technology Park in Wise County
- Sunbright Mine Site in Scott County
- Red Onion Industrial Site in Dickenson County.

Project Oasis coordinator Will Payne said the Lonesome Pine and Red Onion sites had access to adequate electrical capacity and underground mine water sites, which would provide suitable equipment cooling capacity for centers with an initial 10-megawatt power demand and growth for computer servers in the 36-megawatt or more power demand. The Sunbright site is near underground mine voids with temperatures in the 55-degree range that could provide geothermal

cooling capacity, he said, and all three have at least 25 acres of developable land for construction and expansion of data centers.

Payne said that Virginia General Assembly legislation passed in February add another incentive for data center operators looking for cost-effective locations — a state sales tax exemption for companies buying servers and associated equipment for new centers in the state.

Seaver said LPRIFA and LENOWISCO have also been working with member localities' industrial development authorities and economic development authorities on existing sites suitable for designation as state opportunity zones to attract investors in new businesses.

Miller said a $30,000 state Department of Housing and Community Development grant will be used to have a marketing and research firm develop prospectus materials for potential opportunity zones by early summer.

While the planned Lee County Community Hospital reopening in the summer addresses a medical need in Southwest Virginia, Miller said it also adds to the region's attractiveness to new and growing businesses.

"Any improvement to health care in our region can only help economic development in Southwest Virginia," Miller said.

https://www.timesnews.net/reinvigorating-southwest-virginia-s-economy-from-grain-to-data-centers/article_b7a061f0-7a43-11eb-9c35-8bc4e1a51736.html

Regional reboot
Southwest looks to high-tech biz for new direction

By Joan Tupponce
Virginia Business
March 1, 2021

Public and private investments are boosting the economy in Southwest Virginia, bringing in a diversified group of new companies, from indoor salmon farming to medical information technology firms — as well as a long-awaited casino.

Addressing the region's steady decline in the coal industry, officials in the Southwestern region continue to lay out the roadmap for economic sustainability by building on its strengths, a focus it began with the launch of InvestSWVA in September 2019, a marketing plan that aims to bring new businesses to abandoned coalfields.

The vision includes high-tech companies, data centers and investments in information technology and energy innovation as well as an emphasis on advance manufacturing and the craft beverage industry.

Like other regions dealing with the pandemic, Southwest residents have been able to rally together to attract new investments and help existing companies survive and grow. It's particularly significant in the region, where less than half of all households earned the basic cost of living in 2018, according to a November 2020 report by the United Ways of Virginia. With the combination of the pandemic and resulting economic crisis, numbers are likely worse today, the report says.

When it comes to private investments, The United Co.'s plan for a casino in Bristol came to fruition in November 2020, when local voters supported a referendum allowing Hard Rock International to build a resort that is expected to create 2,000 jobs and up to $21 million in annual tax revenue.

Cooperation equals success

The one constant in 2020 was "the cooperation and communication across the region among the economic developers and others involved in improving the region," says Mike Quillen, chair of the Southwest Virginia Energy Research & Development Authority and an adviser in the mining and energy industries. "Everyone is working together to advance the region in a difficult time across the board due to the pandemic. The resiliency of the residents will always be our mantra."

That atmosphere of cooperation helped Russell, Tazewell and Buchanan counties land Pure Salmon International Co., which will construct a large indoor fish-farming operation. The company purchased a 203-acre site for its 1-million-square-foot building over a three-year period, a $228 million investment expected to employ about 230 people by 2023.

"This was Tazewell's project, but they ended up with property that borders Russell and Tazewell counties," explains Ernie McFaddin, chairman of the Russell County Industrial Development Authority.

According to officials, it will be the world's largest vertically integrated indoor aquaculture facility.

"This would not be possible without the support of the Virginia Coalfield Economic Development Authority [and] Buchanan, Russell and Tazewell counties," says Del. Will Morefield, R-Tazewell. "We are confident this project will set a precedent for attracting other investments on an international level. We hope this will be the beginning of an economic revival in the coalfield region of Southwest Virginia."

In January, Rambler Wood Products announced a new manufacturing plant in St. Paul, a $7.6 million investment that is set to create 73 jobs. It will be in the former Bush Furniture Industries building, and the company has committed to sourcing at least 55% of its timber from Virginia in the next three years.

Focusing on crucial industries

The region's focus on advanced manufacturing and IT have brought in several projects.

Grayson County won a bid for Metalworx Inc., a manufacturer of precision-manufactured components, assemblies and products for a variety of industries. The company is investing $7.6 million to relocate its headquarters and manufacturing functions from South Carolina to the former Core Fitness Complex in Grayson County, creating 59 jobs, the company announced last June.

Information technology projects in the region include Reston-based IT federal contractor 1901 Group, which is investing $1.15 million to establish its third Virginia operations center and creating 150 jobs. Recently acquired by Reston-based Fortune 500 company Leidos Holdings Inc. 1901 Group has a significant presence in Blacksburg and started hiring for its new location in Abingdon, although new hires are working from home until the pandemic subsides.

Whitney Czelusniak, economic development coordinator for Washington County, says the county focuses on "asset-based" economic development, which allows more job diversity and economic stability. "We emphasize growth in traded-sector and technology-driven industries, including manufacturing and information technology," she says.

InvestSWVA has devoted attention to the data center business, which is well positioned for a region that has inexpensive land, geothermal cooling opportunities and a workforce ready to be trained, according to a yearlong study.

"We see that renewable energy as the greatest opportunity for Southwest Virginia to reinvent itself, building on its legacy of energy production and using existing coal industry assets including land,

power and water," says Will Payne, managing partner of Coalfield Strategies LLC and director of InvestSWVA.

In the end, adds Quillen, the region hopes to bring higher-paying jobs like "we had in the coal industry. The jobs that could evolve from our work on diversified energy opportunities may not reach that level but will be on the upper tier of pay in the region. Plus, as we have seen in the decades of coal and natural gas, there were ancillary jobs that spin off of that activity. The suppliers, vendors, even restaurants and retail benefit from disposal income generated from higher-paying jobs."

Already the region has attracted eHealth Technologies Inc., which is investing $375,000 to establish a new customer support center in Scott County, expected to create 160 jobs. The Rochester, New York-based company provides medical record and image retrieval and clinical intelligence services to more than half of the nation's top 100 hospitals.

Expanding for greater success

The region also saw several expansions last year. In Washington County, SPIG Industry LLC, manufacturer of highway guardrails and guardrail end terminals, is investing $7.9 million and adding 113 jobs to its operation in the Bristol-Washington Industrial Park. The company will build additional production plants and a welding shop, as well as a new rail spur line to serve its facility.

Grayson Natural Farms LLC, a producer of the Landcrafted Food grass-fed, organic meat snacks brand, is investing $1.5 million to expand its smokehouse and production operation in Grayson County and create 40 jobs. The company will add 35,000 square feet to its manufacturing facility in Independence.

Klöckner Pentaplast Group, a producer of recycled content products and high-barrier protective packaging, is investing a total of $68 million to expand its facilities in Louisa and Wythe counties.

Bland County's large private sector employer, Hitachi ABB Power Grids, a producer of dry-type transformers, is investing $6.2 million to upgrade equipment and increase manufacturing capacity at its operation in the county, adding 40 jobs. The company employs more than 800 workers throughout Virginia, with approximately 332 at its Bland facility.

The region is also working to respond to a need expressed by breweries and distilleries to buy Virginia-grown grain, support small family farms and reduce food miles. InvestSWVA's Project Calypso, which leverages the region's agriculture history to become a significant supplier of craft malt

to breweries and distilleries in Virginia, has launched Appalachian Grains as a specialty grain broker operation supplying craft malt to breweries and distilleries around Virginia.

"We have created a whole new market — growing malting-quality barley — that had not been grown in Southwest Virginia before 2020. We delivered 17,600 pounds of our malted barley to 18 breweries all around Virginia, including larger ones like Devils Backbone and Hardywood," Payne says. "We are creating new market opportunities and giving farmers additional ways to be sustainable and make more money."

https://www.virginiabusiness.com/article/regional-reboot-2/

Southwest Virginia leaders announce lowest regional data center equipment tax rate in the Commonwealth

~ Lonesome Pine RIFA local governing bodies and Commissioners of the Revenue signed MOU, agreeing to new property taxation class with favorable depreciation schedule ~

InvestSWVA + Lonesome Pine RIFA Press Release
March 2, 2021

The Southwest Virginia member localities of the Lonesome Pine Regional Industrial Facilities Authority (Lonesome Pine RIFA), including Dickenson County, Lee County, City of Norton, Scott County, and Wise County, announced today an agreement on what will be the Commonwealth's lowest regional property tax rate on data center equipment. The regional partnership will be implementing a tax rate of $0.24 per $100 of assessed value with a favorable depreciation schedule, taking into account the capital cost of equipment and frequency of server replacement. This unified approach strengthens the region's business case and opens up the opportunity for revenue sharing.

"I am proud of the Lonesome Pine RIFA localities for taking the data center industry's lead by implementing this critical competitiveness tool for our region," said Senator Todd Pillion (R - Abingdon). "This five-month effort to implement InvestSWVA's Project Oasis recommendation demonstrates our commitment to making Southwest Virginia a prime location for data centers."

This announcement builds on related efforts during the 2021 General Assembly session. Pillion worked in a bipartisan way, as chief co-patron of Senate Bill 1423 along with Senator Jeremy McPike (D - Prince William) and Senator Frank Ruff (R- Clarksville), to reduce the job creation requirement for

data centers to qualify for the retail sales and use tax exemption in a distressed locality from 25 to 10 jobs. The bill also lowered the new capital investment threshold from $150 million to $70 million.

“Local tax rates are extremely important considerations for site selection due to the capital cost of equipment and frequency of server replacement,” said Delegate Terry Kilgore (R - Gate City). “We are sending the message to the data center industry that Southwest Virginia is aggressively pursuing investments that will be gamechangers for our region.”

“The Lonesome Pine RIFA’s MOU and collaborative efforts serve as a model for the Commonwealth,” said Delegate Will Wampler (R - Abingdon). “With that model now in place, we want to work with other Southwest Virginia localities to implement this competitiveness tool region wide.”

The Lonesome Pine RIFA member localities and their Commissioners of the Revenue entered into a Memorandum of Understanding on February 1, 2021. The local governing bodies individually agreed on the new property tax classification and uniform depreciation schedule over the course of the month (Scott: 2/3/21, Lee: 2/16/21, Norton: 2/16/21, Wise: 2/18/21, and Dickenson: 2/23/21). The localities will take final action this spring, formally adopting the terms of this agreement through their annual budgetary process. These localities will be among the first in Southwest Virginia’s GO Virginia Region One footprint to have a data center specific taxation class in place for computer systems, servers and other equipment.

The Code of Virginia allows localities to offer data center specific tax rates and aggressive depreciation schedules, with the goal of providing a more competitive operating cost environment. The cost of servers is a significant capital expense, and their regular replacement provides additional ongoing tax revenue for localities. This equipment would otherwise be taxed at the business tangible personal property rate if no special taxation class is designated, or unless negotiated on a case-by-case basis.

“The Lonesome Pine RIFA is pleased that its member localities have worked collaboratively to create a unified, equitable and competitive approach to the attraction of data centers to our region,” said Mitzi Sykes, Chair of the Lonesome Pine RIFA. “Our localities working in sync on this initiative to attract significant capital investment will reap positive benefits to our entire region as we stand stronger together.”

The Lonesome Pine RIFA was established in 2019 to provide a mechanism enabling its member localities to capitalize on the strength of collaboratively working together and engaging in revenue sharing for regional projects. The purpose of the LPRIFA is to develop and enhance infrastructure,

programs, and initiatives that diversify economic development and job creation opportunities for the region.

The Lonesome Pine RIFA worked with InvestSWVA since October 2020 to implement this taxation classification recommendation. InvestSWVA's year-long Project Oasis study found that Southwest Virginia is well-positioned for data centers because of land availability, mine-based geothermal cooling opportunities unique to the region, and workforce readiness and development. The study also outlined policy and infrastructure changes that could be made by the region and state to make Southwest Virginia more attractive for data centers.

"Swift action over five months demonstrates Southwest Virginia's commitment to following InvestSWVA's playbook to secure new data center investment in the region," said Will Payne, Managing Partner of Coalfield Strategies and project lead for InvestSWVA. "Project Oasis is a data-informed and industry-backed tool highlighting Southwest Virginia's competitive advantages."

The Project Oasis study was led by R. Kent Hill, managing principal of On Point Development Strategies and the former manager of strategic economic development for Dominion Energy. The LENOWISCO Planning District Commission and the Southwest Virginia Energy Research and Development Authority served as strategic partners, with funding from the GO Virginia Region One Council and the Virginia Department of Mines, Minerals and Energy. Both the Northern Virginia Technology Council and Data Center Coalition provided industry expertise.

The economic and fiscal impact analysis that was conducted for Project Oasis estimated that a large data center locating in the region would result in over 2,000 jobs created during construction, 40 direct and 59 additional permanent jobs, $233 million in economic activity during construction, and over $50 million in economic activity annually once operations begin. This model facility would require an estimated $464.1 million total capital investment.

Six sites met the general criteria for a large 36-megawatt hyperscale data center, and four additional sites could be suitable for a smaller data center of up to 10 megawatts. Two of the sites have opportunities for geothermal cooling through utilization of 51-degree mine water contained in vast pools below the surface of previously mined properties. An additional site has underground space that provides a consistent 55-degree temperature. Both conditions maximize water utilization and make data center operations more sustainable.

Southwest Virginia communities to offer tax benefit to lure data centers

By Scott Robertson
The Business Journal of TN/VA
March 2, 2021

The effort to incentivize companies to build data centers in southwest Virginia took a significant step March 2, with the announcement that four counties and one city have agreed to lower their property tax rate on data center equipment. The new rate, 24 cents per $100, will be the lowest in Virginia.

The new tax class will give Dickenson, Lee, Scott and Wise counties and the city of Norton (collectively, the Lonesome Pine Regional Industrial Facilities Authority or RIFA) a strong new incentive to offer, said Will Payne, managing partner of Coalfield Strategies and director of InvestSWVA. “Without the special tax class, which the localities can pursue by code, Wise County would have to charge $1.59 (per $100).”

The localities will take final action this spring, formally adopting the terms of this agreement through their annual budgetary process.

The Code of Virginia allows localities to offer data center specific tax rates and aggressive depreciation schedules, with the goal of providing a more competitive operating cost environment. The cost of servers is a significant capital expense, and their regular replacement provides additional ongoing tax revenue for localities. This equipment would otherwise be taxed at the business tangible personal property rate if no special taxation class is designated, or unless negotiated on a case-by-case basis.

Kent Hill of On Point Development Strategies conducted a study on behalf of InvestSWVA and the Lenowisco Planning District to determine the potential viability of data centers in the region. Hill said the new tax rate will be create benefits for both the local governments and the companies that bring data centers to southwest Virginia. “It’s a tremendous revenue stream for the localities. The real estate component alone of these deals is much more significant than pretty much any other use you would have for that same property. So, you’re not giving away the store to attract data centers. They’re still paying a tremendous amount of tax revenue.”

Delegate William Wampler pointed out the fact that Henrico County had cut its property tax rate on data center equipment to 40 cents per $100 and successfully recruited a billion-dollar-plus data center in 2020. “You can say that Facebook was willing to make a $1 billion investment at that rate. We could see something comparable in southwest Virginia.”

In addition, the Virginia General Assembly this year passed legislation expanding the sales and use tax exemption for data centers. Senator Todd Pillion championed SB1423, which reduces the job creation requirement to qualify for the sales and use tax exemption for data centers in a distressed locality from 25 to 15 jobs. The bill also redefined what criteria are used to identify a distressed locality; under the bill, a locality qualifies as distressed if it has an unemployment rate that is greater than the statewide unemployment rate and a poverty rate that exceeds the statewide poverty rate.

"The bill also lowered the new capital investment threshold from $150 million to $70 million," Pillion said. "It just makes all the counties in southwest Virginia very attractive."

Said Payne, "We're trying to eliminate barriers to locating in the region…in order to attract data centers, we need to go the extra mile in proving this region has a business-friendly climate."

The new incentives are potentially most beneficial to the economic development effort known as Project Oasis, which markets sites built on flooded former coal mines. The water from the mines creates a natural geothermal coolant source for data centers. InvestSWVA, which runs Project Oasis, made the original recommendation to the Lonesome Pine RIFA that it pursue the lower tax rate.

The economic and fiscal impact analysis that was conducted for Project Oasis estimated that a large data center locating in the region would result in over 2,000 jobs created during construction, 40 direct and 59 additional permanent jobs, $233 million in economic activity during construction, and over $50 million in economic activity annually once operations begin.

This model facility would require an estimated $464.1 million total capital investment. Six sites met the general criteria for a large 36-megawatt hyperscale data center, and four additional sites could be suitable for a smaller data center of up to 10 megawatts. Two of the sites have opportunities for geothermal cooling through utilization of 51-degree mine water contained in vast pools below the surface of previously mined properties. An additional site has underground space that provides a consistent 55-degree temperature. Both conditions maximize water utilization and make data center operations more sustainable.

The Project Oasis effort has the support of the Northern Virginia Technology Council (NVTC), which represents, among others, companies that operate data centers. Those companies are looking for lower cost opportunities than those that currently exist in eastern and northern Virginia. "Over the past few years we have seen such tremendous growth in northern Virginia, and land prices have grown exponentially. So, from our perspective, we're really excited about what's going on and think this opens up opportunities elsewhere in the state."

A 2020 data center report issued by the NVTC makes the case that opening data centers outside northern Virginia to supplement the existing capacity benefits both the companies and the communities. According to that report, in Henrico County, the incentives created for the data center operator totaled a little less than $500,000, while the direct tax benefit to the community was $3.78 million.

“The local tax effort and what we saw from the general assembly with the retail sales and use tax are both complementary and I believe they’re going to be key attractors for southwest Virginia,” Payne said. “We’re sending the message that we are doing everything possible to let it be known that we’re serious about landing investment.”

https://indd.adobe.com/view/3404513d-e71f-446a-b76f-23db43326b04

SW Va. aims to attract data centers via regional tax pact
Joint effort by five localities will build on recently passed state legislation

By Rich Griset
Virginia Business
March 2, 2021

As part of an effort to entice data centers to locate in the region, Southwest Virginia leaders announced Tuesday a joint agreement to set what will be Virginia’s lowest regional property tax rate on data center equipment.

The localities comprising the Lonesome Pine Regional Industrial Facilities Authority — Dickenson, Lee, Scott and Wise counties and Norton — have entered into an agreement to each establish a tax rate of 24 cents per $100 on data center equipment. By comparison, Henrico County slashed its data center equipment tax rate to 40 cents on every $100 in March 2017 in order to attract the $1.75 billion Facebook data center, which opened last year at the county’s White Oak Technology Park in Sandston. At the time, Henrico’s was the lowest such tax rate in the state.

Now, through its Project Oasis initiative, the region hopes to leverage the area’s underground water in former coal mines to provide free geothermal cooling as a significant savings tool for data centers, which typically rack up high HVAC utility and maintenance bills to keep equipment from overheating. The block tax rate is intended as an additional incentive to the region’s offer of available and cheap land, geothermal cooling and workforce readiness and development.

According to the October 2020 Project Oasis study commissioned by InvestSWVA, the region is well-positioned for data centers. The study states that one large data center could result in more than 2,000 jobs and $50 million in annual economic activity for the region.

That same study states that six sites in the area have met the general criteria to locate a large, 36-megawatt hyperscale data center, and that four additional sites could be suitable for a smaller data center of up to 10 megawatts. Two sites have geothermal cooling opportunities through the utilization of 51-degree water contained in pools on the mining properties. One additional site has underground space that provides a consistent 55-degree temperature.

Tuesday's announcement builds upon the Virginia General Assembly's passage last week of Senate Bill 1423, which reduces the job creation requirement necessary for data centers to qualify for the retail sales and use tax exemption in a distressed locality from 25 to 10 jobs. The bill also lowers the new capital investment threshold from $150 million to $70 million.

Speaking during a virtual news conference Tuesday, Del. Terry Kilgore, R-Gate City, said that these new incentives will help attract more data centers like the existing Mineral Gap Data Center Campus in Wise, where Ashburn-based DP Facilities has a highly secure data center for government and health care clients. "We're not reinventing the wheel," Kilgore said. "We're just building on our success."

Kilgore and other regional leaders participating in the news conference said that while the reduced income tax rate would help attract data centers, localities will still reap the benefit of real estate taxes. Project Oasis' projected model data center would involve a $464.1 million economic development investment, with an equipment cost of $201.6 million and a building cost of $262.5 million.

As for a potential local workforce, R. Kent Hill, managing principal of Richmond-based OnPoint Development Strategies, said that students from Mountain Empire Community College in Big Stone Gap are trained with adaptable skill sets that could be utilized by data center employers.

"If we were to get a large data center to select [a site] in the region, they would have a custom-tailored workforce or training program that would hit the road fairly quickly," Hill said, noting that some data centers jobs have six-figure salaries.

Hill added that each of the sites under consideration has been examined for viability, including for power and connectivity capabilities. Fiber-optic internet either already exists at the locations or could be extended "fairly easily."

As for the block tax rate agreed to by the localities, final action will take place this spring when they formally adopt the terms of the memorandum of understanding through their annual budgetary process.

https://www.virginiabusiness.com/article/sw-va-aims-to-attract-data-centers-with-lowest-equipment-tax-rate/

Southwest Virginia localities agree on sales tax, depreciation plan to attract data centers

By Mike Still
Kingsport Times News
March 2, 2021

Five Southwest Virginia localities have agreed on a new tax category and accelerated equipment depreciation schedule to attract a new business sector to the region — data centers.

The common tax category rate and depreciation schedule came together formally on Tuesday with an announcement by the Lonesome Pine Regional Facilities Authority, economic development partnership InvestSWVA and Southwest Virginia legislators.

LPRIFA member localities Lee, Scott, Wise and Dickenson counties and the city of Norton all approved in February a memorandum of understanding that their governments will incorporate the new 24-cent per $100 assessed value personal property sales tax rate for data center equipment in their 2021-22 budgets along with a depreciation schedule that would allow center operations to write off equipment value over five years.

State Sen. Todd Pillion, R-Abingdon, credited the help of Sens. Jeremy McPike, D-Manassas, and Frank Ruff Jr., R-Clarksville, in carrying legislation that passed the General Assembly in February to allow for the tax rate. Under that legislation, operations with $70 million or more in investment and 10 or more employees would be able to take advantage of the rate.

“I’m proud that LPRIFA is taking the lead to implement Project Oasis’ recommendations,” Pillion said.

“That gives us a push to recruit some of these data centers,” said Del. Terry Kilgore, R-Gate City, adding that the region’s growing broadband infrastructure makes the region “able to provide the infrastructure these data companies need.”

InvestSWVA project coordinator Will Payne said the rate marks a significant drop from localities' existing personal property tax rates. In Wise County, he said, the normal personal property rate is $1.59.

The new rate follows an InvestSWVA report from last fall — Project Oasis — which examined potential data center sites based on land, availability of cheap electricity and the potential for geothermal equipment cooling by underground mine water sources.

Three of the six prime sites in the Oasis report are in the LPRIFA service area — one each in Wise, Scott and Dickenson counties.

Kent Hill, who oversaw the Oasis study for InvestSWVA, said that the region's access to commercial capacity broadband along the Interstate 81 corridor into central Tennessee has also become an advantage for the LPRIFA sites.

Even with the lower tax rate category, Hill said, data centers with a 2- to 3-year equipment replacement cycle still represent a "tremendous revenue stream for localities."

"We don't want folks to think we're giving away the store," Hill added.
While new jobs in potential Southwest Virginia data centers may not have the pay levels found in Northern Virginia, Payne said they will be high-paying jobs.

The Oasis report estimated that one large center locating in the region could bring more than $464 million in investment and would create more than 2,000 jobs during construction. Another 99 direct and associated permanent jobs with an annual $50 million in regional economic impact would come once the center became operational.

Former Virginia Commerce and trade Secretary Todd Haymore, now a global development director with law firm Hunton Andrews LLP, said companies considering expanded or new data center operations have looked more over the past three years at locations outside the Northern Virginia region and other urban areas of the state.

State Del. William Wampler III, R-Abingdon, said the tax rate category and the Oasis report come at a time when Northern Virginia — the main concentration of data center operations in the state — helped Virginia handle about 20% of the world's daily data traffic. Growing demand for those centers combined with a lessening supply of sites puts Southwest and Southside Virginia in a good position for attracting centers.

"People in Northern Virginia probably want to see fewer data centers," Wampler said.

https://www.timesnews.net/news/southwest-virginia-localities-agree-on-sales-tax-depreciation-plan-to-attract-data-centers/article_c741262c-7ba5-11eb-bbe4-8f26b493b36f.html

Regional agreement opens door for new data centers

Bristol Herald Courier
March 3, 2021

A group of Southwest Virginia localities agreed Tuesday to establish the state's lowest property tax rate for data center equipment in hopes of attracting more to the area.

Member localities of the Lonesome Pine Regional Industrial Facilities Authority, including Dickenson, Lee, Scott and Wise counties and the city of Norton, announced the agreement to set the tax rate of $0.24 per $100 of assessed value with a favorable depreciation schedule, according to a news release.

"I am proud of the Lonesome Pine RIFA localities for taking the data center industry's lead by implementing this critical competitiveness tool for our region," state Sen. Todd Pillion, R-Abingdon, said in the statement. "This five-month effort to implement InvestSWVA's Project Oasis recommendation demonstrates our commitment to making Southwest Virginia a prime location for data centers."

This announcement coincides with Senate Bill 1423, championed by Pillion, Sen. Jeremy McPike, D-Prince William, and Sen. Frank Ruff, R-Clarksville, to reduce the job creation requirement for data centers to qualify for the retail sales and use tax exemption in a distressed locality from 25 to 10 jobs. The bill also lowered the new capital investment threshold from $150 million to $70 million.

"Local tax rates are extremely important considerations for site selection due to the capital cost of equipment and frequency of server replacement," said Del. Terry Kilgore, R-Gate City. "We are sending the message to the data center industry that Southwest Virginia is aggressively pursuing investments that will be game changers for our region."

Preliminary action has been completed, and the member localities are expected to formally adopt the terms of this agreement through their annual budget process this spring. These localities will be

among the first in Southwest Virginia's GO Virginia Region One footprint to have a data center-specific taxation class in place for computer systems, servers and other equipment.

An economic and fiscal impact analysis conducted in the 2020 Project Oasis study estimated that a large data center in the region would create more than 2,000 jobs during construction, 40 direct and 59 additional permanent jobs, $233 million in economic activity during construction and over $50 million in economic activity annually once operations begin, the news release states.

Six regional sites met the general criteria for establishing a large 36-megawatt data center, and four additional sites could be suitable for a smaller data center of up to 10 megawatts, the study found.

https://heraldcourier.com/news/regional-agreement-opens-door-for-new-data-centers/article_e69a4abe-6902-5ea7-9838-aacaeb304b6e.html

Coal counties make bid for data centers

By James A. Bacon
Bacon's Rebellion
March 3, 2021

Six localities in far Southwest Virginia have agreed to offer big tax breaks in a bid to recruit more data centers to the economically depressed region. The Project Oasis initiative will dangle the lower taxes as well as geothermal cooling from old coal mines as enticements that no other region can match.

The localities in the Lonesome Pine Regional Industrial Facilities Authority — Dickenson, Lee, Scott, and Wise counties and the City of Norton — have agreed to tax data-center equipment at a rate of $0.24 per $100, almost half the rate of the $.40 rate, the previous lowest rate in the state, that enabled Henrico County to attract a $1.75 billion Facebook data center.

As a kicker, Project Oasis offers industrial sites located near former coal mines filled with water naturally cooled to a temperature of 51 degrees. Energy consumption for cooling is a major expense for data centers. Project Oasis claims that geothermal cooling could save data centers more than $1 million annually in reduced electric costs and municipal water purchases.

Despite the low tax rates, SW Virginia localities would reap what for them would amount to a revenue bonanza. A $464 million data center in Wise County would support more than 2,000 construction jobs over 18 months, 40 long-term data center jobs, $900,000 in payroll once operations

begin, and $15.7 million in real estate and property tax revenues over the first five years in operation, according to Project Oasis' "Market Analysis for Data Center Investment in Southwest Virginia."

Economic impacts that provide only incremental tax and job boosts to a major metropolitan economy would loom large in Southwest Virginia, a region that has been struggling to diversify as its economic foundation, coal mining, shrinks to nothing.

Access to fiber connectivity should not be a major obstacle. The six sites identified by Project Oasis are located within one to two miles of fiber-optic cable trunk lines. However, the report does concede that "some of the sites will require construction of new fiber over challenging terrain resulting in a greater cost per mile."

Besides touting the sustainability advantages of using mine water instead of electricity to provide cost-effective cooling, economic developers are selling the region's remote location as a plus. States the study:

The region provides a low risk option from natural and man-made disasters and meets distance requirements for disaster recovery and back up from primary data center locations such as Ashburn, Richmond, and Boydton, VA (Microsoft).

Marketers even see the COVID-19 epidemic as a potential bonus.

With the impacts of the COVID-19 pandemic and potential future yet-to-be-determined public health events likely continuing into the foreseeable future, a location that provides a diversity of geography and workforce so that back up sites can be manned and maintained is important.

Wise County is home to one data center already. The Mineral Gap Data Center Campus in Wise, owned by Ashburn-based DP Facilities, is a highly secure data center for government and healthcare clients. "We're not reinventing the wheel," said Del. Terry Kilgore, R-Gate City, in a press conference Tuesday. "We're just building on our success."

Bacon's bottom line: Compare and contrast the poverty-amelioration strategy of SW Virginia with Virginia's inner cities. Southwest Virginia emphasizes economic development and job creation, and the region's Republican politicians expend their political capital to advance those goals. Democrats from Virginia's eastern metro areas see "social justice" reforms and government-mandated wealth transfers like a $15 minimum wage as the antidote to poverty. The big metros have far more resources to work with, but it's not clear to me that the "social justice" movement is addressing real problems. It will be interesting to see which approach is more successful in the long run.

https://www.baconsrebellion.com/wp/coal-counties-make-bid-for-data-centers/

Southwest Virginia strikes tax deal to lure data center business

By Annie Gaus
BisNow
March 4, 2021

In a bid to draw data centers, leaders in southwest Virginia announced a joint agreement this week that sets the lowest property tax rate in the state on data center equipment.

Under the agreement, Virginia's Dickenson, Lee, Scott and Wise counties, along with the city of Norton — have agreed to each set a tax rate of 24 cents per $100 of assessed value on data center equipment, along with a favorable depreciation schedule.

The tax deal builds on SB 1423, recently approved by the Virginia General Assembly, that reduces the job creation requirement for data centers to qualify for tax exemptions in a distressed locality from 25 to 10 jobs. The bill also lowered the new capital investment threshold from $150M to $70M.

"I am proud of the Lonesome Pine RIFA localities for taking the data center industry's lead by implementing this critical competitiveness tool for our region," said Virginia state Sen. Todd Pillion in a statement. "This five-month effort to implement InvestSWVA's Project Oasis recommendation demonstrates our commitment to making southwest Virginia a prime location for data centers."

As part of Project Oasis, leaders in southwest Virginia are pitching the region as a complement to neighboring northern Virginia, otherwise known as Data Center Alley.

Southwest Virginia is home to many unused mines, which could make for ideal data center sites if outfitted for built-in cooling that natural floodwater provides. InvestSWA, a regional economic development group, identified six sites suitable for a 36 MW data center, and four additional sites suitable for smaller data centers. The group estimated that mine-water cooling could save operators more than $1M annually in electricity costs and municipal water purchases.

"We have great assets: power, land and water, and with this Project Oasis technology we think we can save data centers significant municipal water and energy costs and help them achieve their sustainability goals," Will Payne, director at InvestSWA, told Bisnow last fall.

Payne said that for specialized customers, such as national security agencies, data center sites in southwest Virginia could supplement existing capacity in neighboring northern Virginia.

Northern Virginia leads the U.S. by far in terms of total capacity. According to CBRE, northern Virginia accounted for about 70% of total net absorption among first-tier U.S. markets in the first half of 2020.

https://www.bisnow.com/virginia/news/data-center-bisnow-national/southwest-virginia-strikes-tax-deal-to-lure-data-center-business-107996

Virginia's Southwest counties set lowest data center property tax in state
Five localities of the Lonesome Pine Regional Industrial Facilities Authority undercut Loudoun and Henrico

By Dan Swinhoe
Data Center Dynamics
March 4, 2021

Five Southwest Virginia leaders announced this week made a joint agreement to set what will be Virginia's lowest regional property tax rate on data center equipment, in a bid to draw in business which currently clusters in Northern counties like Loudoun and Henrico.

The localities comprising the Lonesome Pine Regional Industrial Facilities Authority — Dickenson, Lee, Scott and Wise counties and the City of Norton — have agreed to each set a tax rate of 24 cents per $100 on data center equipment.

"The Lonesome Pine RIFA is pleased that its member localities have worked collaboratively to create a unified, equitable and competitive approach to the attraction of data centers to our region," said Mitzi Sykes, Chair of the Lonesome Pine RIFA. "Our localities working in sync on this initiative to attract significant capital investment will reap positive benefits to our entire region as we stand stronger together."

By comparison, Henrico County reduced its data center equipment tax rate to 40 cents on every $100 in March 2017 in order to lure Facebook to construct a facility in the county's White Oak Technology Park. At the time this meant Henrico had the lowest such tax in the State.

"I am proud of the Lonesome Pine RIFA localities for taking the data center industry's lead by implementing this critical competitiveness tool for our region," state Sen. Todd Pillion, R-Abingdon, said in the statement. "This five-month effort to implement InvestSWVA's Project Oasis recommendation demonstrates our commitment to making Southwest Virginia a prime location for data centers."

SW Virginia wants Northern Virginia's data center milkshake

There has been a push to drive more data center investment towards the southern part of Virginia as the area tries to move on from its coal mining history and claim a slice of the data center boom that have been going in the north of the state for years.

Northern Virginia is the main data center hub for the whole world, but the benefits are concentrated in a few counties. More than 500MW of colocation capacity was leased in the area last year, according to a North American Data Centers report. A 2019 study by the Joint Legislative Audit and Review Commission found that 69 percent of data center investment between 2009–2018 went into Northern Virginia, with 15 percent going into Richmond, and 10 percent to Southside.

Within Northern Virginia, the epicenter is Ashburn in the county of Loudoun, close to Dulles International Airport.

"Local tax rates are extremely important considerations for site selection due to the capital cost of equipment and frequency of server replacement," said Delegate Terry Kilgore (R - Gate City). "We are sending the message to the data center industry that Southwest Virginia is aggressively pursuing investments that will be game-changers for our region."

According to a 2020 report by InvestSWVA, a group decided to attract more business to the region, Southwest Virginia is well-positioned for data centers due to available and cheap land and geothermal cooling. The report said six sites met the general criteria for 36MW hyperscale data centers, and four additional sites could be suitable for a smaller data center of up to 10MW.

"Swift action over five months demonstrates Southwest Virginia's commitment to following InvestSWVA's playbook to secure new data center investment in the region," said Will Payne, Managing Partner of Coalfield Strategies and project lead for InvestSWVA. "Project Oasis is a data-informed and industry-backed tool highlighting Southwest Virginia's competitive advantages."

Data center tax benefit bills making their way through Virginia Senate

Meanwhile, at State level, three proposed amendments that would reduce the thresholds for data centers to qualify for tax exemption in the state are close to being signed into law by the Senate.

Under current regulations, Virginia offers retail sales and use tax exemption for projects that involve $150 million of new capital investment and create 50 new jobs located at the data center, with a lower threshold of 25 jobs for data centers in 'distressed' areas with higher than average unemployment.

Two bills – SB 1423 and HB 2273 – would lower the job requirements for companies building in 'economically distressed' areas of high unemployment, with the latter also significantly lowering the required capital investment required to qualify. A third – SB 1425 – would reduce job creation requirements if the data center operator has already been granted tax exemption on a previous facility. All three have passed votes are currently awaiting votes in the Finance and Appropriations Committee.

Virginia as a whole already offers generous terms to data center companies. In 2020, the commonwealth beat its own record for data center tax exemptions, distributing more than $110m and beating its previous record of $92.2 million set in 2019.

There is also competition elsewhere in the US to attract digital infrastructure investment through tax incentives; the Connecticut Senate passed a new bill that provides sales tax and property tax exemptions, while Wyoming voted down a bill that would have repealed tax benefits for data centers in the state.

https://www.datacenterdynamics.com/en/news/virginias-southwest-counties-set-lowest-data-center-property-tax-in-state/

Southwest Virginia leaders push efforts to bring data centers to region

By Olivia Bailey
WCYB
March 12, 2021

Officials in Southwest Virginia are working to make the region more appealing for data centers.

Leaders say they want to improve the business climate for potential investors to settle in distressed areas.

Senator Todd Pillion (R - Abingdon) carried a bill that lowers the threshold for data centers to take advantage of tax credits.

The bill passed in the General Assembly reduces the capital investment from $150-million to $70 million and 25 employees to 10.

“We have land, and we have trunk lines of fiber that can provide the internet capabilities. We also have very safe areas that can provide everything that data centers look for. Now, we have the ability to offer tax incentives into areas that normally wouldn’t be looked at," Pillion said.

The Lonesome Pine Regional Industrial Facilities Authority announced last week they have agreed on the state's lowest regional property tax rate on equipment at 24-cents per $100.

“We have a relatively large data center with facilities in Wise County, but in order to attract other data centers, we need to go the extra mile in improving the business-friendly climate and eliminating barriers," Will Payne said. Payne serves as the director of InvestSWVA.

The agency worked to perform a year-long study of the feasibility of data centers in southwest Virginia. He said six locations have been identified as possible sites.

https://wcyb.com/news/local/southwest-virginia-leaders-push-efforts-to-bring-data-centers-to-region

Southwest Virginia leading innovative energy revolution

The Voice of Technology
Northern Virginia Technology Council
May 1, 2021

In the fall of 2019, NVTC joined Southwest Virginia’s senior legislators and the Virginia Tobacco Commission in kicking off InvestSWVA, a public-private business attraction and marketing initiative focused on reinventing the region’s economy. NVTC’s leadership understands that, in order for all of Virginia to thrive, we need every region engaged. This partnership is already helping bridge the gap between our two ends of the Commonwealth.

With a blank slate we created a new, disruptive model and asked economic development partners to opt-in. Southwest Virginia has to change the way it pursues new business investment if it expects different outcomes. For us that means operating at the speed of business, leveraging previously untapped relationships and thriving on accountability. Delegates Terry Kilgore and Israel O'Quinn, Senator Todd Pillion and the late Senator Ben Chafin delivered on their word to take a hands-on approach, serving as validators and deal closers.

We developed a vision that spotlights Southwest Virginia's strategic advantages, namely qualify of life, a dedicated workforce, affordable real estate and availability of significant grant dollars to pair with private investment. We then laid out a roadmap for economic sustainability — a vision for the region that builds on its strengths in which Southwest Virginia can be a home to high-tech companies looking to grow, a location of choice for data centers, a hotbed for energy innovation, a strategic location for advanced manufacturing and a significant player in the craft beverage industry.

We view energy as the single greatest opportunity for the region to redefine itself. Southwest Virginia has a history of driving energy production and manufacturing with its key role in the extractive economy. Metallurgical coal helped build America, while wells drilled over 60 years ago still produce natural gas today. However, the new energy economy is upon us, and we are leading the way.

Our Project Innovation is working with the Southwest Virginia Energy Research and Development Authority to build on the region's storied energy legacy while focusing on renewable, clean and zero-carbon projects. We will become the energy innovation capital of the East Coast by repurposing coal industry assets in the development of a first-of-its kind energy lab that will demonstrate cutting-edge technology and assist entrepreneurs in commercializing their IP. Unlike traditional research facilities, our land is the lab, and it affords us a significant competitive advantage.

We recently announced a partnership with Appalachian Power and Dominion Energy to advance the R&D, manufacturing and deployment of energy storage technology. As a start, we teamed up with the Virginia Department of Mines, Minerals and Energy and Liberty University on Project Energizer, a new approach to traditional pumped-storage hydro, in which we'll leverage the region's typography with a scalable, affordable and proven base-load renewable energy storage solution.

For Project Oasis, we leaned on NVTC and the Data Center Coalition for expertise to validate the strength of Southwest Virginia's power and broadband infrastructure in the pursuit of new data center investment and jobs. We see our efforts as complementary to Northern Virginia's data center push, not competitive. Six of our sites meet the criteria for a large 36 MW hyperscale data center, and four additional ones are suitable for a smaller data center of up to 10 MW.

We looked at how Southwest Virginia can stand out by pairing its geography with innovative technology. Two sites can employ geothermal cooling using 51-degree mine water contained in vast pools below the surface of previously mined properties. The annual savings for this system would be over $1 million annually in reduced electric costs and municipal water purchases. It would provide a favorable return on investment and result in net annual savings for the operator. An additional site has a secure, underground space that provides a consistent 55-degree temperature.

Finally, we announced the Commonwealth's lowest regional property tax rate on data center equipment of $0.24 per $100 of assessed value with a favorable depreciation schedule. This unified approach strengthens the region's business case and opens up the opportunity for revenue sharing.

Bottom line: Southwest Virginia offers a strategic location for data center investment, and we can offer affordable real estate, robust power and fiber connectivity, significant cost savings, favorable business conditions and renewable energy solutions that satisfy sustainability goals. We appreciate NVTC's partnership in our energy endeavors and are proud serve as a gateway to growth opportunities in Southwest Virginia.

https://magazine.nvtc.org/2021/05/southwest-virginia-leading-innovative-energy-revolution/?fbclid=IwAR3z1jz8av7ZRTSeUID_mHD3pmEJQ_tD2ybk8a0dmy2AHBeAgwwDSnIJ7h8

The Virginia 500: Economic Development

Virginia Business
September 2021 Special Issue

WILLIAM H. 'WILL' PAYNE II
DIRECTOR, INVESTSWVA, BRISTOL

Payne has been pivotal in attracting business prospects to Southwest Virginia. In the last year, his public-private regional economic development marketing group, InvestSWVA, helped land a 160-job expansion in Scott County for New York-based eHealth Technologies and a 113-job, $7.9 million expansion in Washington County for SPIG Industry.

InvestSWVA also announced a partnership with Appalachian Power and Dominion Energy to advance manufacturing and development opportunities for energy storage technology in Southwest Virginia. And Payne's group spearheaded Project Oasis, an initiative to promote data center development in the region.

A Richmond native and ’80s music fan, Payne keeps an Excel spreadsheet logging the more than 160 concerts he’s attended over the past 20 years. He holds a bachelor’s degree in public policy from William & Mary and is working toward an executive MBA from the University of Virginia Darden School of Business. He is vice rector of William & Mary’s board of visitors and chairs its administration, buildings and grounds committee. He also is a graduate of U.Va.’s Sorensen Institute for Political Leadership.

NEW LIFE EXPERIENCE: Leading an effort to grow Southwest Virginia’s first malting-quality barley crop used in beer production and expanding specialty grain market opportunities.

https://www.virginiabusiness.com/article/economic-development-2021/

Trigiani: Innovators are helping Southwest Virginia forge a new business identity

By Mary Trigiani
The Roanoke Times
September 5, 2021

Art historians know the canvases of the Italian Renaissance represent more than technical achievement. The accomplishments of the long-ago Renaissance artists were shaped by the context of the time in which they lived and a pursuit of relevance that did not compromise their individuality.

They produced works of art and buildings and processes that we respect and we use to this day. There were powerful patrons who paid them to do it. Still, these artists pushed the envelope. And their achievements remain relevant.

They were innovators.

Their accomplishments — and those of innovators in every field of that time — remind us that invention is possible in every type of situation.

Centuries later, central Appalachia possesses all the potential to deliver another renaissance. A rebirth. An embrace of the powerful coalfield heritage and all it means — courage, smarts, work ethic — that delivers new results and commands respect, in any forum.

To get there, we must do more than grab our portion of the significant infrastructure spend underway in America. Let Appalachia — in particular, Virginia's Great Southwest — answer the siren call to invest in infrastructure by setting a new tone: an obsession with solutions. Let us show that the infrastructure spend is a call to act, not to meander. Infrastructure management should mean running projects that come to an end and make way for new ones — not establishing institutions that live on in perpetuity.

In well-run businesses, problems become products and services that make money. In well-run government initiatives, you see a return-on-investment of taxpayer dollars.

Virginia's southwestern region currently offers three examples of the essential factors of contemporary renaissance: private investment and a streamlined approach to deploying the taxpayer investment addressing under-employment; achieving public-private collaboration toward increasing tax revenue; and broadening the industrial base.

All of these are proceeding without adding to bureaucratic bloat or demanding a long wait for ROI.

Wize Solutions of Abingdon was founded in 2017 by impact investors Dario and Wendy Marquez, to create technology jobs in Southwest Virginia so that people would not be forced to leave their communities in search of employment. Wize provides information technology solutions — robotic process automation, systems engineering, software development, data analytics — onshore to metro-based clients at below-metro costs. Twenty-five employees who otherwise would have had to leave the region have their dream jobs in their dream location, and the company already has doubled in size, three years in a row. Mark Eschle, vice president of operations, defines the ROI at this stage as planting seeds of entrepreneurship and providing an example of how American companies can nurture a rural resurgence profitably.

eHealth Technologies, a market leader in medical imaging services, came to the region by way of an informal conversation at a university board meeting — not a marketing push. After talking with Will Payne of Bristol's Coalfield Strategies, Mirza Baig of Aldrich Capital, the lead investor behind eHealth, became intrigued with the region enough to revisit his model of building out portfolio companies in metropolitan areas. Baig connected eHealth CEO Jeff Markin with Payne. They went to work on a location. At the same time, Payne brought Mountain Empire Community College into the equation, to tap its strength in health information management and programming. The partnership between eHealth and MECC delivered a new approach to training workers and onboarding them at warp speed. The result: during the pandemic, eHealth reached an unanticipated volume of client activity and committed to hiring 160 people, the employment goal it had set for 2023. What was a bit of a

risk for Aldrich Capital, in considering a rural location, has turned into a business strategy of rural deployment.

Project Innovation, designed to keep the region in the energy economy, delivers to legacy companies while expanding the options beyond the extraction role — into renewable, clean and zero-carbon business projects. Another InvestSWVA initiative, Project Innovation is building a national, land-centric energy laboratory to repurpose coal industry assets for use in a transformed energy sector. Commercializing intellectual property in energy requires the integration of academic, governmental and industrial expertise; creating energy companies and jobs requires an investment in research the world has not yet seen. Think Oak Ridge, only bigger. It delivers to the assertion that Southwest Virginia is the natural location for energy sector innovation.

By adding to its reputation for delivering, Virginia's Southwest plays in a larger world. Again. It is within our reach to command the dialogue over how best to invest in infrastructure — just by doing it, as a constellation of players, looking to make the next renaissance.

Mary Trigiani is an executive, communicator and commentator who resides in Southwest Virginia. Formerly based in Silicon Valley and Chicago, Mary returned to her Appalachian roots in 2016.

https://roanoke.com/opinion/columnists/trigiani-innovators-are-helping-southwest-virginia-forge-a-new-businss-identity/article_32d4f79a-e96c-11eb-b233-efac298ca4a2.html

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