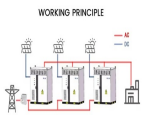
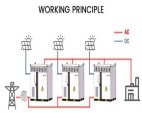


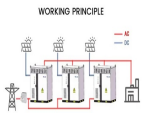
# WORK MEASURES TO SERVE ENERGY STORAGE PROJECTS



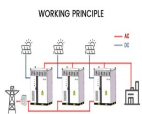
What is energy storage & why is it important? Energy storage (ES) plays a key role in the energy transition to low-carbon economies due to the rising use of intermittent renewable energy in electrical grids. Among the different ES technologies, compressed air energy storage (CAES) can store tens to hundreds of MW of power capacity for long-term applications and utility-scale.



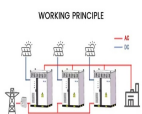
How can energy storage help the electric grid? Three distinct yet interlinked dimensions can illustrate energy storage's expanding role in the current and future electric grid: renewable energy integration, grid optimization, and electrification and decentralization support.



What are co-located energy storage projects? A growing trend in the power sector is the concept of co-located storage projects with power plants, representing a hybridized combination of generation and energy storage at the same location. There are natural synergies to coupling power plant technologies such as solar PV, wind, or even natural gas combustion turbines with energy storage.

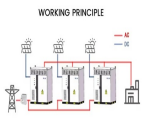


How can energy storage improve the performance of the energy system? More broadly, it would be helpful to consider how energy storage can help to improve the performance of the whole energy system by improving energy security, allowing more cost-effective solutions and supporting greater sustainability to enable a more just

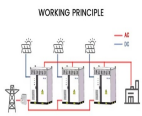


What is the future of energy storage study? The Future of Energy Storage study is the ninth in MITEI's Future of... series, which aims to shed light on a range of complex and important issues involving energy and the environment.

# WORK MEASURES TO SERVE ENERGY STORAGE PROJECTS



What is the business model for energy storage? Less more than one service. The business model for energy storage relies on value stacking, providing a set of services for customers, a local utility and the grid for example. By having two or three distinct contracts stacked on top of each other you are being paid



This new application in Germany will further serve as a proof-of-concept highlighting the value of battery-based energy storage for enhancing transmission infrastructure and driving deployment



When evaluating energy storage partners, look beyond levelized cost of storage criteria. Consider integrated EPC, O&M, and energy storage providers with bankable and competitive storage



Energy storage (ES) plays a key role in the energy transition to low-carbon economies due to the rising use of intermittent renewable energy in electrical grids. Among the different ES technologies, compressed air energy storage (CAES) can store tens to hundreds of hours



A framework for understanding the role of energy storage in the future electric grid. Three distinct yet interlinked dimensions can illustrate energy storage's expanding role in the current and future

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The New York Public Service Commission, directed to do so by the state's legislature, has an ongoing docket that is intended to ultimately specify that a minimum percentage of energy storage projects should deliver clean energy benefits into zones within the New York Independent System Operator (NY-ISO) that serve disadvantaged communities. ???



Recent reports released by the Lawrence Berkeley National Laboratory (LBNL) highlight how high interconnection costs???which refer to the costs associated with interconnecting an energy generator or storage project to the grid, including investments at the point of interconnection and any broader network upgrades needed to accommodate the



Why securing project finance for energy storage projects is challenging. It has traditionally been difficult to secure project finance for energy storage for two key reasons. Firstly, the nascent nature of energy storage technology means that fixed income lenders and senior debt providers are naturally risk averse.



The facility will serve as a large-scale battery energy storage system capable of charging from, and discharging into, the New York power grid. When fully functional, the 100MW battery energy storage project will be able to discharge electricity to ???

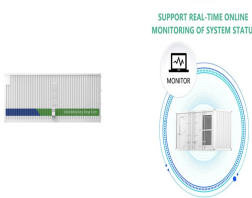


The passing of the Inflation Reduction Act in August of 2022 included provisions that are significantly impacting the utility-scale battery storage industry. This includes the decoupling of storage from solar projects, allowing for standalone energy storage projects to qualify for Investment Tax Credits (ITC) up to 30%.

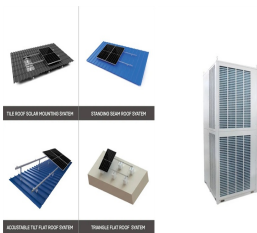
# WORK MEASURES TO SERVE ENERGY STORAGE PROJECTS



Therefore, understanding how these systems work is essential to choosing the right type for a project. Methods of thermal energy storage. There are commonly three methods of thermal energy storage: Sensible heat storage Latent heat storage Thermochemical storage Sensible heat storage



Our study finds that energy storage can help VRE-dominated electricity systems balance electricity supply and demand while maintaining reliability in a cost-effective manner ???



The International Renewable Energy Agency predicts that with current national policies, targets and energy plans, global renewable energy shares are expected to reach 36% and 3400 GWh of stationary energy storage by 2050. However, IRENA Energy Transformation Scenario forecasts that these targets should be at 61% and 9000 GWh to achieve net zero ???



Energy storage (ES) plays a key role in the energy transition to low-carbon economies due to the rising use of intermittent renewable energy in electrical grids. Among the different ES technologies, compressed air energy storage (CAES) can store tens to hundreds of MW of power capacity for long-term applications and utility-scale. The increasing need for ???



The Independent Electricity System Operator (IESO) and the Oneida Energy Storage Project finalized a 20-year energy storage facility agreement to store and reinject clean energy into the IESO-controlled grid. This spring was also ushered in by an announcement by the IESO on a complement to the Oneida Energy Storage Project. The IESO is offering

# WORK MEASURES TO SERVE ENERGY STORAGE PROJECTS



Energy storage is key to secure constant renewable energy supply to power systems ??? even when the sun does not shine, and the wind does not blow. Energy storage provides a solution to achieve flexibility, enhance grid reliability and power quality, and accommodate the scale-up of renewable energy. But most of the energy storage systems ???



Energy Storage . An Overview of 10 R& D Pathways from the Long Duration stakeholder engagement and evaluation methods that measure the impact of innovations on LCOS is the average price a unit of energy output would need to be sold at to cover all project costs (e.g., taxes, financing, operations and maintenance, and the cost to



Tesla's Megapack is designed specifically for utility-scale energy storage projects. The Megapack builds on the success of the company's Powerpack, the world's largest lithium-ion battery



ARPA-E funds a variety of research projects in energy storage in addition to long-duration storage, designed to support promising technologies and improvements that can help scale storage deployment. With the support of government and industry, research and development for energy storage technologies can continue to develop and expand.



Project Summary: This project seeks to reduce energy burden and electrify 300 tribal homes by installing 2.5 kW off-grid solar photovoltaic (solar PV) and battery energy storage systems. Communities within the Navajo and Hopi Nations have some of the best solar resources in the country and yet thousands of tribal homes lack access to electricity.

# WORK MEASURES TO SERVE ENERGY STORAGE PROJECTS



MITEI's three-year Future of Energy Storage study explored the role that energy storage can play in fighting climate change and in the global adoption of clean energy grids. Replacing fossil ???



In project management, timeliness is crucial as it directly affects the cost and budget management of the project. A project that is completed on time is more likely to stay within the allocated budget. To measure the success of a project in terms of timeliness, project managers often use a metric known as schedule variance.



The Renewable Energy Directive (RED) sets a binding target of 42.5% of renewable energy in final energy consumption by 2030. This translates into roughly 70% of renewables in the electricity mix in 2030, getting close to a tipping point where the flexibility needs could increase exponentially an increasingly renewables-based electricity system, the ???



GE's scope of work includes the design, supply, transport, and commissioning of the turbines, generators, main transformers, and electrical balance-of-plant equipment. The project, which has been designed with 91% of infrastructure underground to minimise visual impact, is expected to come online in 2027 with an energy storage capacity of 3.5GWh.



The North America and Western Europe (NAWE) region leads the power storage pipeline, bolstered by the region's substantial BESS segment. The region has the largest share of power storage projects within our KPD, with a total of 453 BESS projects, seven CAES projects and two thermal energy storage (TES) projects, representing nearly 60% of the global ???



# WORK MEASURES TO SERVE ENERGY STORAGE PROJECTS



California is experiencing a surge in development of battery energy storage projects driven by policy initiatives and consumer demand supporting development of renewable energy projects. (often at least another 30???60 days). Additionally, the public review and comment process can serve to galvanize and rally new opposition to the project



Declining costs of energy storage technologies, particularly lithium-ion battery storage, opens the potential for larger capacity and longer-duration energy storage projects to provide a broader ???



The IRA extended the ITC to qualifying energy storage technology property. 8 Previously, energy storage property was eligible for the ITC only when combined with an otherwise ITC-eligible electricity generation project. Now, energy storage projects that are either standalone or combined with other generation assets could be eligible. 9 This is



PA 233, approved by the Legislature and Gov. Gretchen Whitmer, gave the MPSC siting authority for utility-scale solar, wind and energy storage projects under specified conditions. The Commission in February 2024 directed MPSC Staff to file recommendations on application filing instructions, guidance related to compatible renewable energy



Laboratory???work as a team to provide strategic insight and develop connections across the the Goldendale Energy Storage Project (GESp). This report is a companion to the . PSH Valuation Guidebook. 1. The John Day Substation, which will serve as an electrical tie- in point, is located across the Columbia River in Oregon. The closed

# WORK MEASURES TO SERVE ENERGY STORAGE PROJECTS

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new, innovative storage technologies that may address future long duration needs. ??? Validate first-of-a-kind long duration systems at utility scale and validate pathways to Storage Shot 90% cost reduction targets. ??? Pilot storage to help new storage end users overcome institutional and informational barriers. ??? Increase resilience