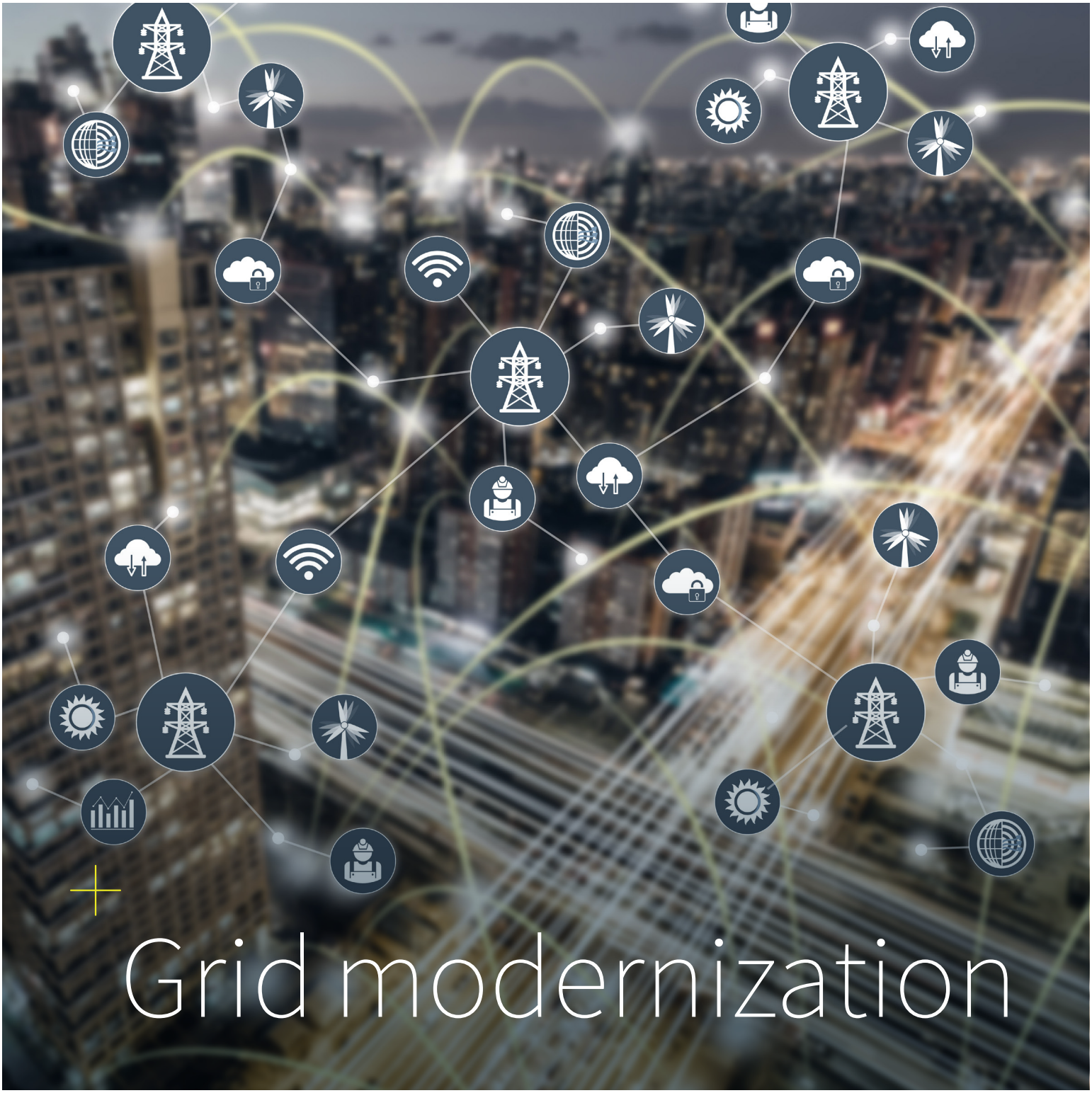

Grid modernization

Capability statement

HATCH

Grid modernization: overcoming the challenges

The impact of technology, cyber security, climate change, and the rise of the prosumer are among the leading factors of uncertainty and risks driving the requirements of grid modernization and its digital transformation. We can help.

From growth rates of distributed generation and distributed energy resources (DERs), to the increasing penetration of behind-the-meter (BTM) technologies, to the high speed at which the digital transformation is taking place, uncertainties continue to rise month-over-month, year-over-year. The challenges become amplified when coupled with operational risks including power quality issues and back-feeding to transmission, lack of interoperability leading to outages and system failures, and the probability of emerging smart technologies. What each of these scenarios present is a significant operational and financial risk to your business.

Utilities and operators are expected to deliver resilient, secure, sustainable, and affordable electricity utilizing grids designed in a different era. In short, you are being asked to do more with electric infrastructure than it was originally intended to deliver. At the same time, you are faced with aging infrastructure, shifting load profiles, increasing regulatory pressures, loss of tribal knowledge, and a changing workforce.

Grid modernization is critical to successfully overcoming these challenges.

Our approach: understanding what grid modernization means to you

To thrive in this environment, your business model, asset management systems, and technology adoption must be agile, integrated, and collaborative.

Understanding your business and the risk mitigations required to ensure reliable and resilient operations requires an in-depth understanding of your business processes, operational risks, and technology maturity level.

Your vision, risk tolerance levels, and definition of what success means to you drives the development of right-sized risk mitigation solutions. This includes a modernization roadmap to align the business, assets, and technologies. Along the way, determining how to measure resilience will encourage stakeholder alignment and business plan approvals for implementation.

To address these challenges, you need an innovative partner who understands technology advancement, smart power systems, advisory services, and digital transformations to deliver the grid of the future.

We have the expertise to help modernize your operations. From planning and financial forecasting processes, to intelligent and automated controls, including efficiency, reliability, power quality, load balancing, and even energy storage, we can help deliver grid modernization that will be critical to successfully improving security, increasing the integration of renewables, achieving distributed generation, and reducing peak loads while decreasing your overall operational costs.

Key expertise

Technical and digital road-mapping

Whether you are upgrading your operations to meet industry standards or updating your practices to be best-in-class, Hatch's experience with maturity assessments of distribution, transmission infrastructure, and grid modernization activities has you covered. From industry benchmark comparisons and recommendations to the development or review of your grid modernization technical and digital roadmap, our experts provide tangible value in your planning and implementation.

Automation

As smart devices continue to be deployed throughout transmission, distribution, and substation systems, there is a greater need for intelligent and automated controls, as well as communications mediums to manage how power is transmitted and delivered. Our planning, implementation, and integration services are geared towards ensuring every aspect of your operation can acclimate to a more intelligent and automated network.

Advanced distribution management system (ADMS)

Leveraging our distribution, outage, and SCADA management system expertise will support your grid planning and operations so that the best fit-for-purpose solution will account for and notify you of any irregularities and issues that may arise across your network. Integrating these systems with other supporting systems such as GIS, OMS, AMI/MDM, and your CIM network model provides you with a single source of data to make dynamic and proactive decisions to ensure your grid maintains the highest possible standard of safe reliability. From system specification, digital road-mapping, data quality enhancement, and system integration, we guide you through the process to deploy and fully integrate your ADMS.

Distributed energy resources (DER) management

DERs can transform the way power is generated and transmitted by deploying a combination of both physical and virtual assets that can be implemented across electric grids. Specific challenges of utilities today include meeting the uncertain growth demands of electric vehicle charging, the impact of behind the meter (BTM) battery deployment, and how to accommodate bidirectional power flows. From concept to design, construction, analysis, and implementation, let us help you navigate the process of integrating DERs within your networks.

Integrated Resource Planning

From load growth, generation technology development, fuel availability and prices, implementation of major generation projects, demand side management/energy efficiency programs, and integration of distributed energy resources, we carry out detailed planning studies to help you plan and develop your grid appropriately over the short, medium, and long terms.

Value-added services-at-a-glance

We add value to your operations with a range of integrated and specialized asset management services, including:

- Advanced metering infrastructure data utilization leveraging
- Advisory services
- Asset condition assessment
- Data analytics and optimization
- Data management
- Design engineering
- Digital transformation planning
- Economic impact assessments
- Independent engineering
- Lender's engineering
- Maturing technology monitoring and evaluation
- Operational performance reviews and benchmarking
- Operations and maintenance (O&M) process reviews
- Physical and cyber security plan development, implementation, monitoring, and reporting
- Power system studies and modelling
- Regulatory and tariff structuring / filing support
- Risk assessment
- Risk Mitigation planning & implementation
- Risk-based investment planning
- Smart grid maturity assessments
- Substation automation
- System Integration
- Volt/VAR control and optimization

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About Hatch

Whatever our clients envision, our engineers can design and build. With over six decades of business and technical experience in the mining, energy, and infrastructure sectors, we know your business and understand that your challenges are changing rapidly.

We respond quickly with solutions that are smarter, more efficient, and innovative. We draw upon our 9,000 staff with experience in over 150 countries to challenge the status quo and create positive change for our clients, our employees, and the communities we serve.

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