

REMODELING **THE FUTURE**

How energy transition is driving new models in energy and utilities

"New-energy models" refers to new products and services and new ways of operating existing business. Such models include energy services, energy platforms, energy-storage solutions, alternate fuels, mobility services, grid-management services, and clean-energy.



Onshore and offshore wind solar power, hybrid farms, CPPA, local generation, sustainable power plants, CCUS

Alternate fuels Fuel from bio waste and hydrogen, biogas

distribution

Transmission and

Trading and energy platforms

Generation

Grid management services Smart grid management, 患 microgrid-as-a-service, demand

response, aggregator business model, hydrogen transportation, heating networks, grids convergence



Electrification: mobility services + electric heating

EV charging stations and services, flexible charging that enables G2V and V2G, hydrogen charging stations, electric heating and cooling

Energy-storage solutions

Energy generation and storage at home, Storage for renewables and networks (stationary), gigafactories (storage and electrolysers)

Energy-as-a-Service

Consumer: Smart homes, and other hybrid services, Commercial: EaaS for smart cities and buildings, smart industry, smart lighting

Energy platforms

Asset management platforms, wholesale energy trading services, micro-services-based IoT platforms, peer-to-peer energy exchange platforms

Hydrogen, the new energy carrier, carbon reduction and offsetting services

Retail and services

Source: Capgemini Research Institute analysis.

THE ENERGY AND UTILITIES SECTOR IS ON THE CUSP OF TRANSITION DUE TO DECARBONIZATION, MASSIVE **ELECTRIFICATION, AND INCREASE IN ENERGY EFFICIENCY**

68% say that mitigating the impact of climate change is driving their shift towards new-energy models, while **63%** cite investor demand as a driver of change.

71% of executives say that energy and utilities companies that do not implement new-energy models will be wiped out.

Energy and Utility players that do not implement new-energy models will be wiped out



Share of organizations that agree with the above statement

*Australia, Singapore, and Japan. Source: Capgemini Research Institute, New-energy Models in the Energy and Utilities Sector survey, August–September 2021, N=530 organizations from the energy and utilities sector.

Organizations cite strong customer demand and regulatory support for most models

Percentage of respondents who rated each model "high" for customer demand and regulatory support



Source: Capgemini Research Institute, New-energy Models in the Energy and Utilities Sector survey, August–September 2021, ¹N=71, ²N=35, ³N=41, ⁴N=30, ⁵N=50, ⁶N=57, ⁷N=34, ⁸N=39 organizations from the energy and utilities sector.

ORGANIZATIONS THAT HAVE IMPLEMENTED NEW-ENERGY MODELS REPORT MULTIPLE BENEFITS



Organizations have already achieved an increase of 6% in revenues due to new-energy models and expect an11% increase in the next three years.



Organizations which are implementing clean energy models have achieved a reduction of 4.6% in scope-3 emissions and expect a further reduction of 13% in the next three year

MULTIPLE CHALLENGES TO THE ADOPTION OF NEW-ENERGY MODELS

Most organizations are yet to implement new-energy models

Only 25% are implementing energy platforms, 19% are implementing energy storage solutions, and only 16% are implementing grid-management services.

Alternate	16%	48%	37%
fuels Energy-storage	17%	64%	19%
solutions	21%	55%	24%
Clean-energy	34%	42%	25%
platforms	38%	42%	6 20%
Mobility services/ infrastructure	37%	469	% 16%
rid-management services	会 42%	4	1% 18%

Is your organization exploring the following new models?



- We do not plan to implement this new-energy model
- We are not implementing it currently, but we plan to in future
- We are implementing this model

Source: Capgemini Research Institute, New-energy Models in the Energy and Utilities Sector survey, August–September 2021, N=530 organizations from the energy and utilities sector.

There are multiple challenges to the adoption of new-energy models



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Only 18% o organizations have a comprehensive, global business strategy for new-energy models with well-defined goals



68% of organizations lack in-house technology expertise and lack focus on new technologies.



62% of organizations do not have adequate skillsets to develop, sell, or manage services.



Only 33% of organizations operate an innovation function at scale to develop and test new models and industrialize the results

WHAT DO COMPANIES NEED TO SCALE NEW-ENERGY MODELS?



Develop a robust data and technology foundation for new-energy models



Source: Capgemini Research Institute analysis.



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