

Presentation of survey results, insights, and recommendations

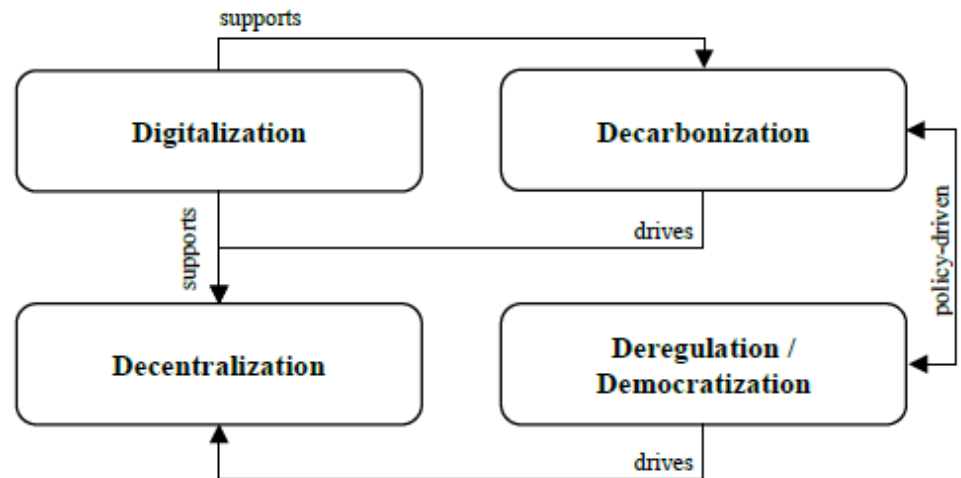
20 September 2022



**75 YEARS
OF ECONOMIC INTEGRATION
AND COOPERATION
IN THE REGION**

Digitalization in the energy sector

- Decarbonization and deregulation/democratization policies shape the transformation of energy sectors globally.
- Digital technologies help to coordinate, analyze and interpret increasing quantities of energy system data, user preferences and system requirements.
- Digital technologies facilitate energy system optimization under a spatial and temporal decoupling of energy supply and generation sources, increasing system efficiency.



International to regional: You'll never “digitalize” alone

International organizations, governmental organizations

- Showcase: Internet Governance Forum

National and regional governments

- Showcase: UK Energy Digitalization Strategy

International, national and regional NGO

- Showcase: AlgorithmWatch,

Electricity companies

- Showcase: Iberdrola

Digital economy companies

- Showcase: Google

Digitalization can improve system efficiency and observability

- Overall electricity system efficiency could be improved by introducing real-time measurements.
- Digitalization allows for the full exploitation of flexibility in network planning and design, which can enable more “non-wired solutions”, and eventually, decrease costs.
- Digital grid’s instant observability through various data sources can increase grid resilience.
- Digitalization can create new jobs in the electricity industry, through new business models and technologies.

Doing it right: Knowing digitalization's multiple challenges

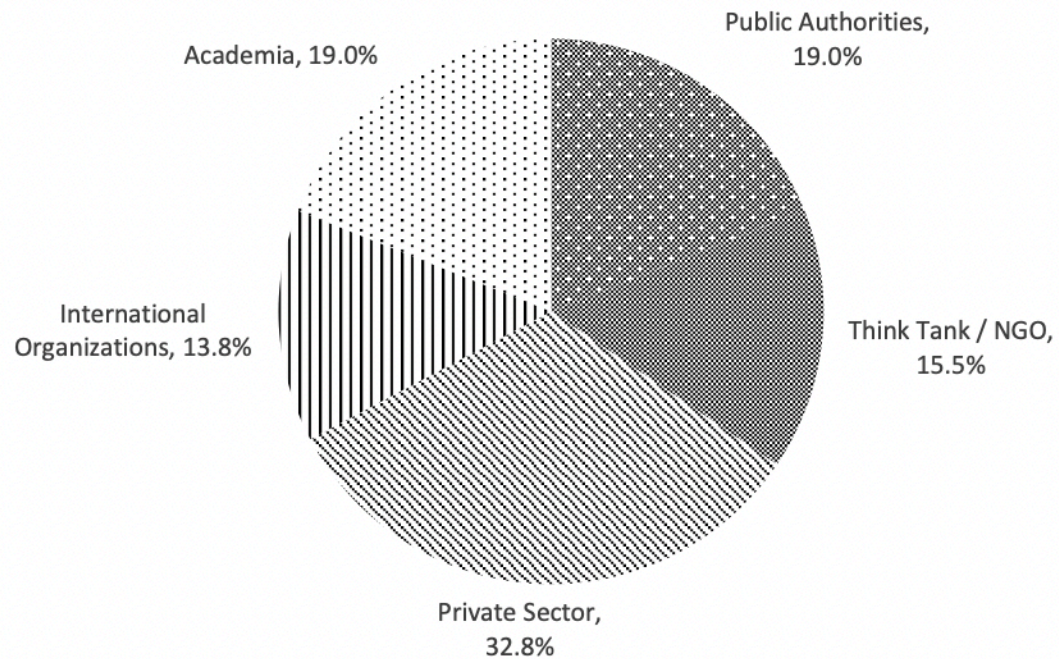
- Increased need for digital technology, data storage and processing capacity is based on raw materials and energy, whose consumption rises in return.
- Multiple layers of information and operation technology, incl. software, computing, networking, and storage infrastructure require increasing efforts of interoperability.
- Increased proliferation of Distributed Energy Resources and interconnectivity will increase complexity of system operation and may introduce new threat surfaces for cyber attacks.

Doing it right: Knowing digitalization's multiple challenges

- Digitalization raises important social and economic questions related to labour markets, as its penetration will cause current human-intensive activities to reduce their operations resulting in a potential loss of jobs or heavy re-skilling.
- Continuous monitoring of the benefits and costs of digitalizing the electricity systems is essential also in the attempt to have an equitable approach on potential distributional effects globally.

Perception of digitalization in energy systems – a global look [1/4]

Figure II
Distribution of respondents by sector



Perception of digitalization in energy systems – a global look [2/4]

Figure III
Survey results: key barriers that are holding countries back from implementing digital technologies quicker

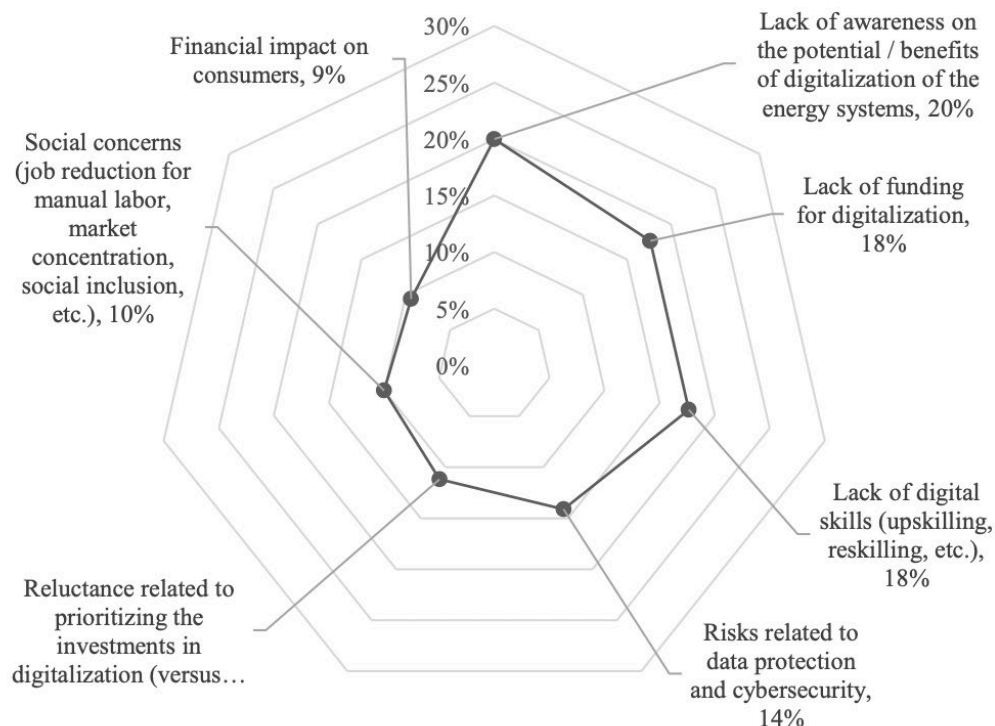
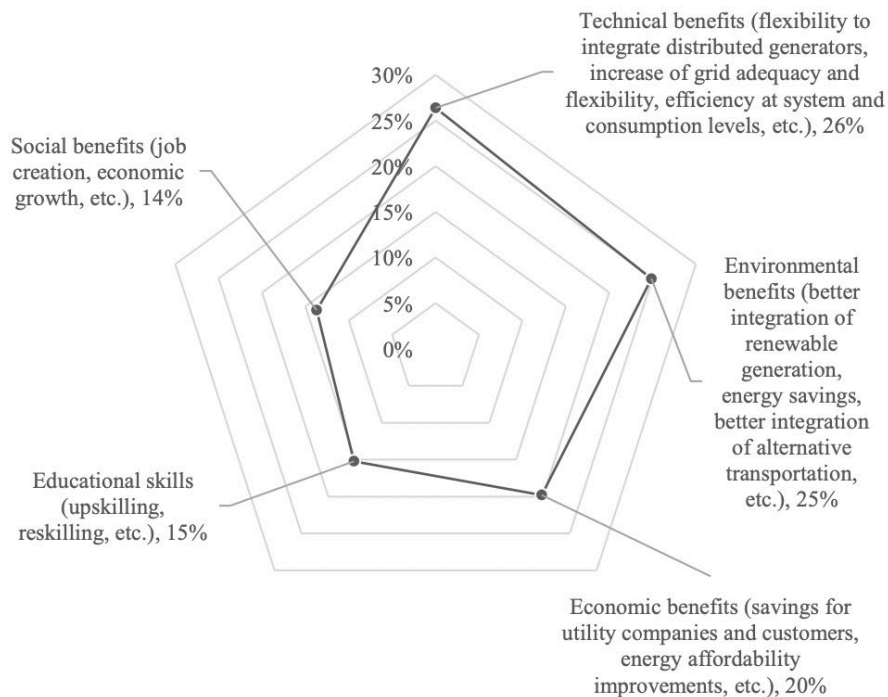


Figure IV
Survey results: main benefits that digitalization could bring in the energy sector



Perception of digitalization in energy systems – a global look [3/4]

Figure V
Survey results: main challenges regarding data, its management, and utilization

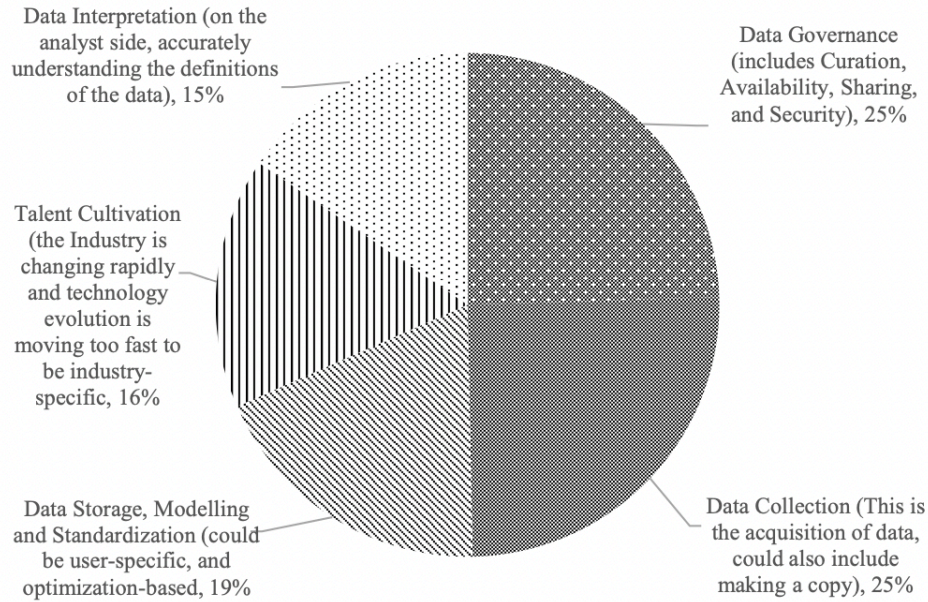
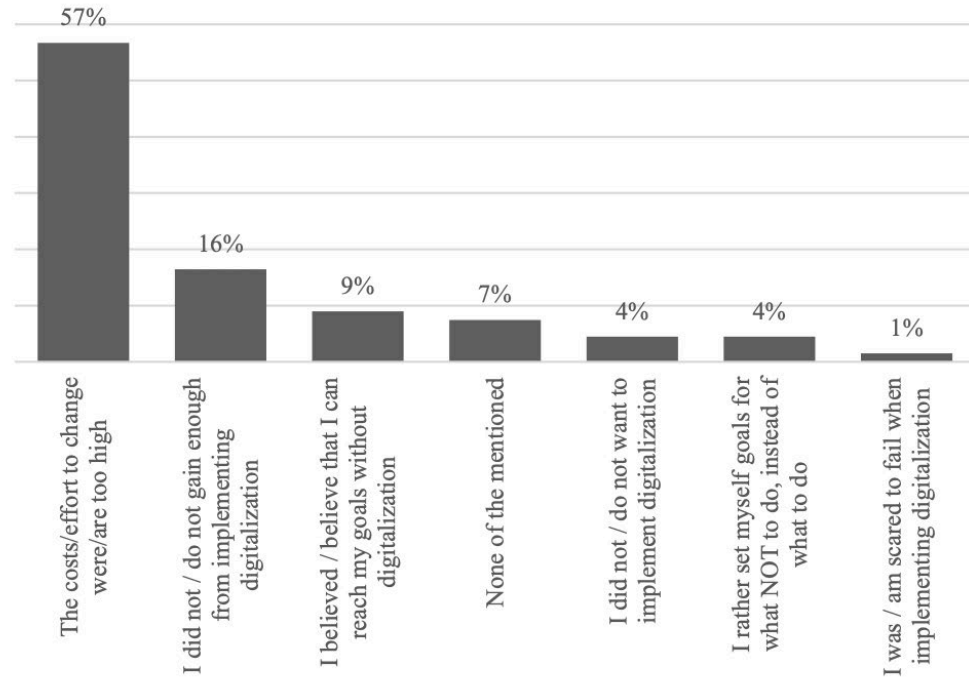
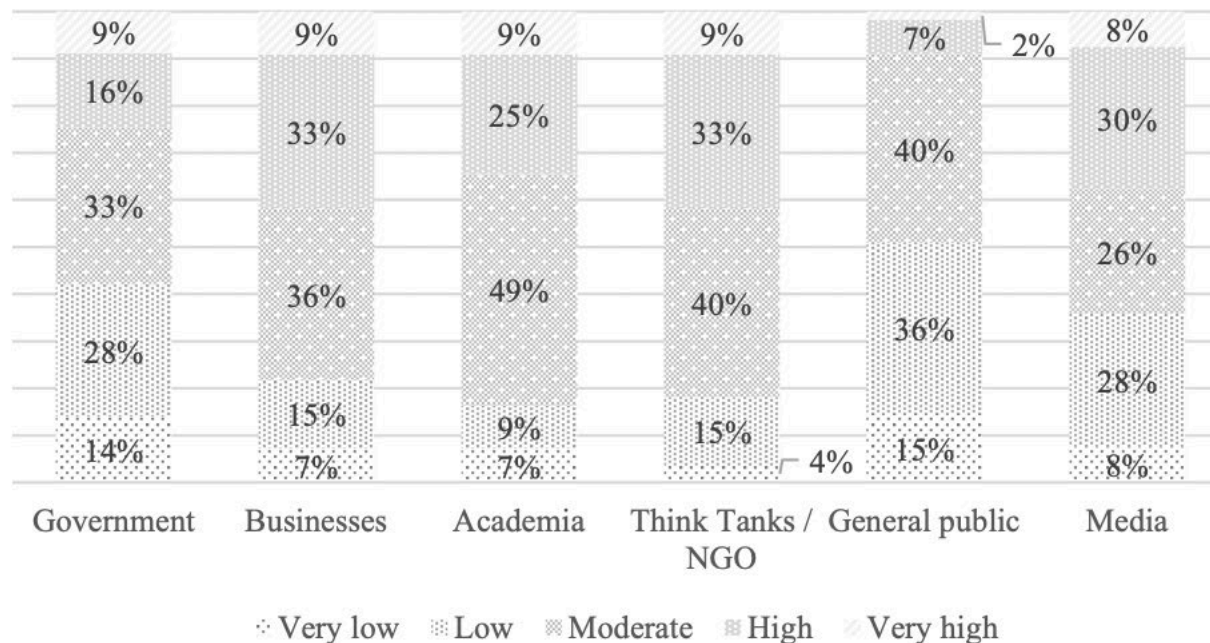


Figure VI
Survey results: main reasons holding back implementation of digitalization in energy



Perception of digitalization in energy systems – a global look [4/4]

Figure VII
Survey results: distribution of responses on rating of digitalization literacy among the selected stakeholders (percent)



Realizing digitalization's full benefits: Policy and business options

Table 2
Public policies and business strategies that can be implemented to increase the digitalization level of the electricity systems

Policy / Business Strategy	Impact			Policy / Business Strategy	Impact		
	0-2 years	2-5 years	5-10 years		0-2 years	2-5 years	5-10 years
Prioritization of digital solutions in core infrastructure development such as smart meter rollout in national energy strategies and development plans or investments by central and local authorities and grid operators, prioritising interoperable and, where available, open-source solutions	Low	High	High	Foster increased collaboration among public authorities, private companies, civil society and academia to raise awareness and upskill in the area of energy digitisation	High	High	High
Implementing dynamic grid fees and enabling peer-to-peer and community trading to foster local energy markets	Medium	High	High	Increase focus on research and development of new technologies in the electricity systems and ensure mainstreaming of successful pilot projects	Low	Medium	High
Simplifying procedures for adopting and subsidizing prosumers and initiating and operating local energy markets, while also redefining their role in the wholesale electricity markets	High	High	Low	Implement reskilling and upskilling programmes for jobs at risk from increased digitalization in the energy sector	High	Medium	Low
Encourage demand-response technologies and local energy trading both among business and household customers	High	High	High	Adjust the current academic curriculum and accommodate digital-related subjects to create a digital-culture for future graduates	Low	Medium	High
1) Developing specific standards for new and existing data centres operations and development (technical and energy consumption dimensions), in line with climate and energy policies and 2) considering decentralised data management solutions (governance), specifically a decentralised energy asset registry to support energy efficiency and interoperability	Low	High	High	Plan and run awareness campaigns to promote the benefits of digital energy services, as well as tackle concerns (data protection, data privacy, etc.)	Low	Medium	High
				Develop cyber security protection policies and encourage a higher attention from business operators	High	High	High



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Date 20 | 09 | 2022

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