



# A case study: Digital Demand-Driven Electricity Networks (3DEN) project

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#### **Digital Demand-Driven Electricity Networks Initiative (3DEN): the framework**

The Italian Ministry for Environment and Energy Security, in coordination with the Italian Ministry of Foreign Affairs and International Cooperation, and the International Energy Agency are working together on a 4-year initiative focusing on the policy, regulatory, technology and investment context needed to accelerate progress on power system modernisation and effective utilisation of demand side resources.

The initative has been developed in the context of the Climate Action Summit in 2019, with a view to step up global action for clean energy and to combat climate change.

The Italian Government has, moreover, launched an implementation phase, managed by the UN Environment Programme (UNEP), which will be used to test new approaches via pilot initiative deployment.

### Digitalisation is changing all energy demand and supply sectors











Digital technologies can help improve safety, productivity, and efficiency of energy systems

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## Digitalisation opens opportunities for system-wide efficiency





With the right policies, digitalisation enables a progression to optimise the whole energy system, with multiple benefits and greater efficiency.

#### **Digital Demand-Driven Electricity Networks Initiative (3DEN)**

- Aim of the Project providing actionable guidance to policy makers on the policy, regulatory, technology and investment context needed to accelerate progress on power system decarbonisation and modernisation and effective utilisation of demand side resources
- Project phase 1 timeline: 2020 2023
- Global scope, geographic focus including but not limited to Brazil, Colombia, India, Indonesia, Morocco, South Africa, Tunisia, and Latin America, Africa, Southeast Asia regions. Ongoing engagement with a Consultative Group of Experts (37 members from 14 countries)
- Italy / UNEP are supporting pilot projects that will be implemented in 2022 to test new approaches on demand side and distributed energy resources in (1) Urban contexts, (2) Islanded systems, (3) Existing grid assets learnings will feed into 3DEN analysis.
- Project timeline



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- Upcoming policy guidance documents
  - Smart grids in emerging markets and developing economies
    - How investments in physical and digital infrastructure in the sort to medium term can bring multiple benefits such as grid resilience and improved financial standing
  - Grids of the future
    - The twin transitions of the digital and energy transition, to achieve a higher power system efficiency
- Previously published reports
  - G20 Report Empowering Cities toward Net Zero Emissions
    - Resilient, smart and sustainable cities towards a sustainable energy future
  - Unlocking the potential of distributed energy resources
    - Lessons to help policy makers, regulators and system operators for electricity market design
  - Towards net-zero: Interoperability of technologies to transform the energy system
    - OECD Going Digital Series to provide policy makers with the tools they need to help their economies and societies thrive in an increasingly digital and data-driven world



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Resources

Power system opportunities and best practices

Link



#### **3DEN Actionable policy guidance for emerging economies**





**Green investment enabling environment:** stimulate public-private partnerships, support the creation of new instruments, dedicated financing vehicles, introduce training to develop a pipeline of bankable projects, and support the creation of revenue-generating business models



**Strengthening collaboration by:** creating opportunities for peer-to-peer exchange, establish communities of practice, knowledge-sharing platforms, and cross-cutting networks, to share solutions and approaches for common challenges, build capacity and facilitate dialogue between stakeholders especially with on the ground implementation capacity

The Italian Government and the IEA would **welcome further countries and organisations** joining the initiative and actively contribute to the development of analysis, tools, engagement, and guidance to accelerate progress on power system modernisation in support of clean energy transition around the world.

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