



Strategies for digitalisation:

Comparing global approaches from a policy maker's perspective

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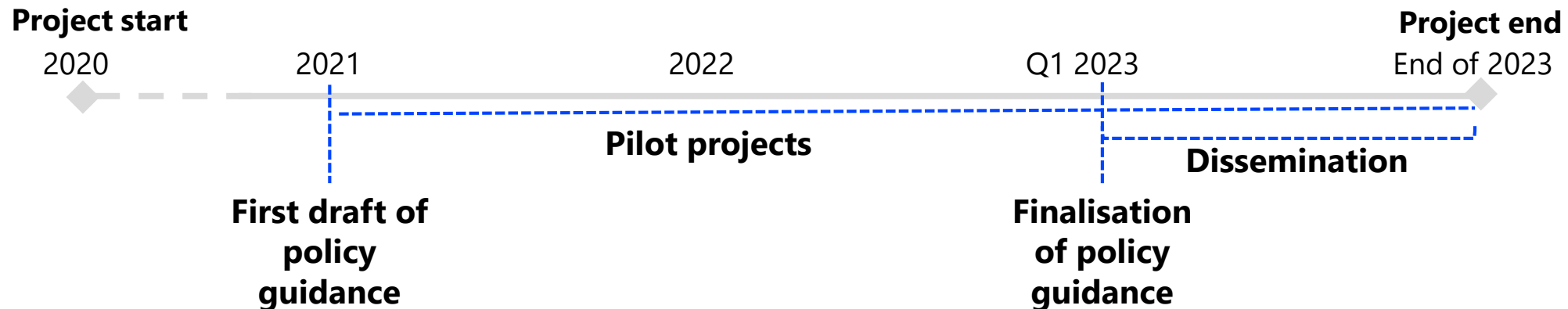
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Overview of Digital Demand-Driven Electricity Networks Initiative (3DEN)



- **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 modernisation and effective utilisation of demand side resources
- **Outputs**
 - Tools and policy guidance documents
 - Pilot projects assessment guide including methodology and indicators
 - Interim outputs: webinars, roundtables, events, articles, chapters in publications and commentaries
- **Geographic focus, including but not limited to**
 - Key Countries – Brazil, Colombia, India, Indonesia, Morocco, South Africa, Tunisia
 - Key Regions – Latin America, Africa, South East Asia
- **Tentative Project timeline**

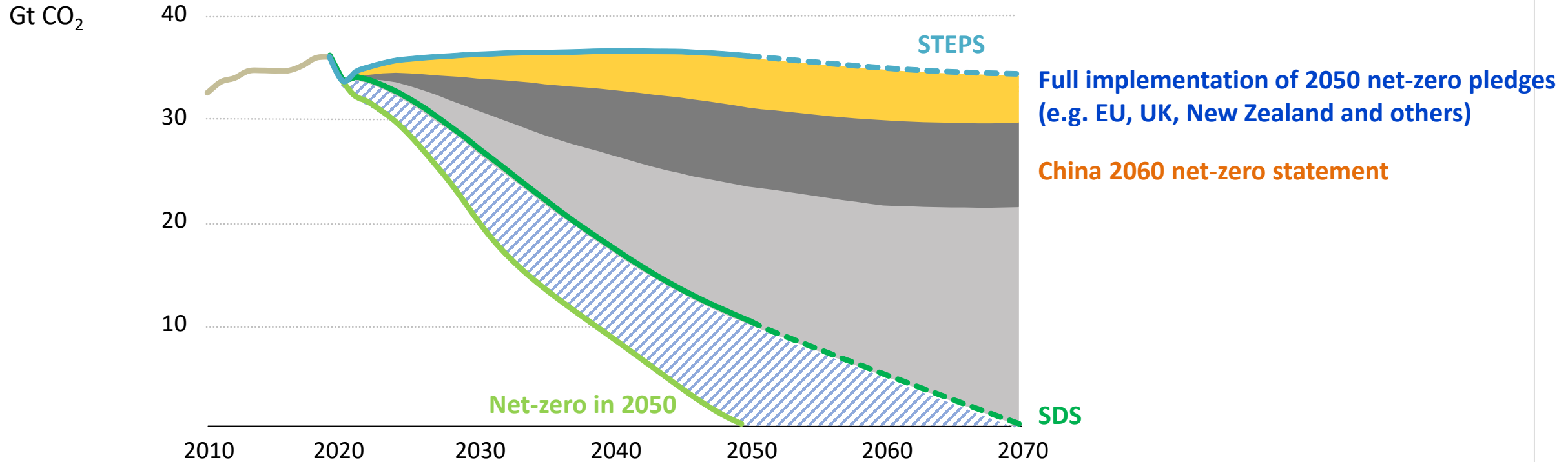


The Power System Flexibility Campaign

- Three-year Clean Energy Ministerial work stream focused on public-private cooperation to accelerate the integration of VRE through improved power system flexibility:
- Previous stages have focused on ‘hardware’ while the latest phase focuses on three key enabling frameworks:
 - Market design
 - Digitalisation
 - Sector coupling
- Campaign is member-driven through:
 - High-level ministerial events
 - International expert workshops
 - Dedicated bilateral support to members
- Currently in final phase and continuation through a CEM initiative is in planning

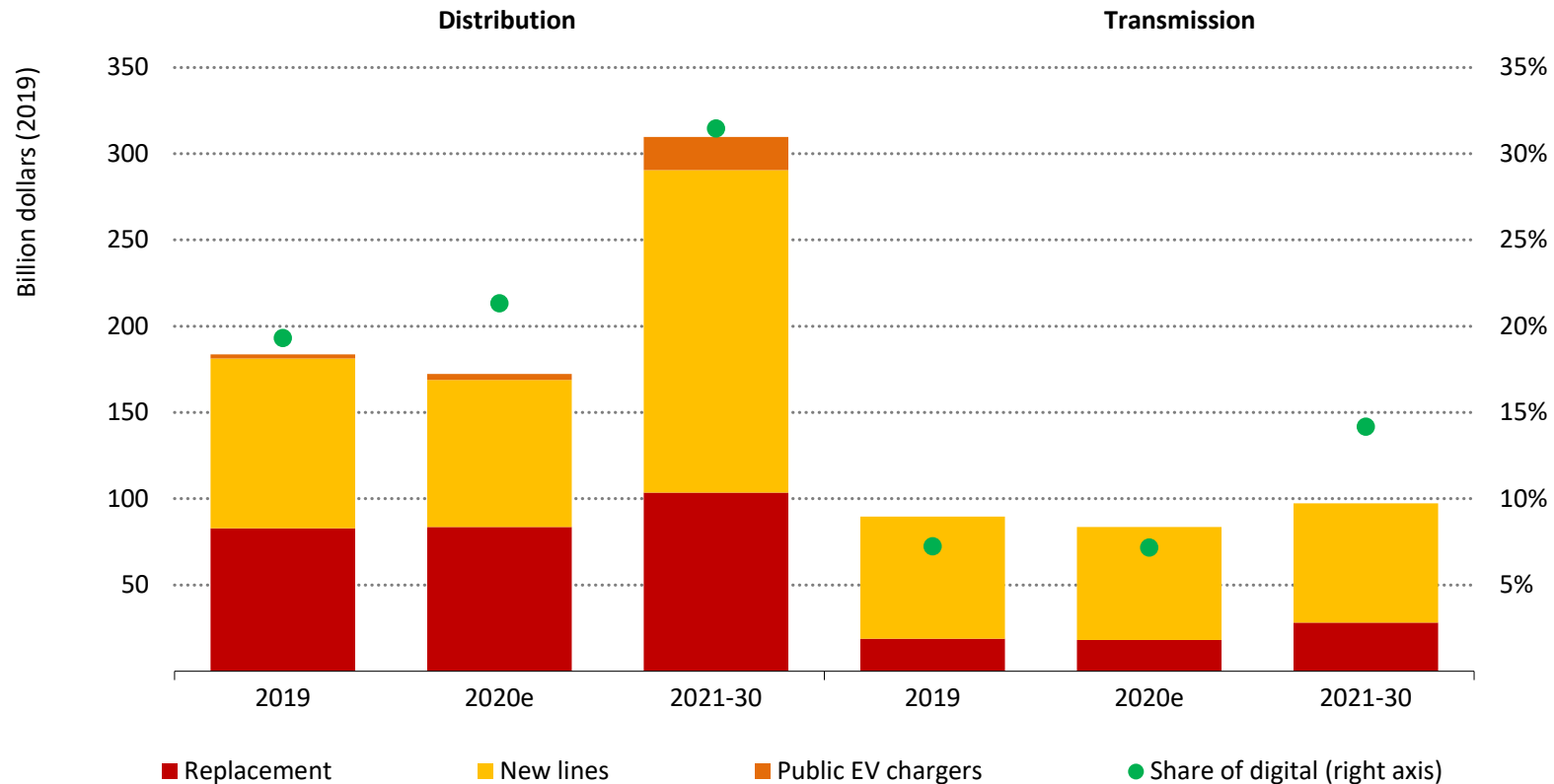


The world is still far from putting emissions into decisive decline



Global emissions are set to bounce back more slowly than after the financial crisis of 2008-2009, but the world is still a long way from a sustainable recovery

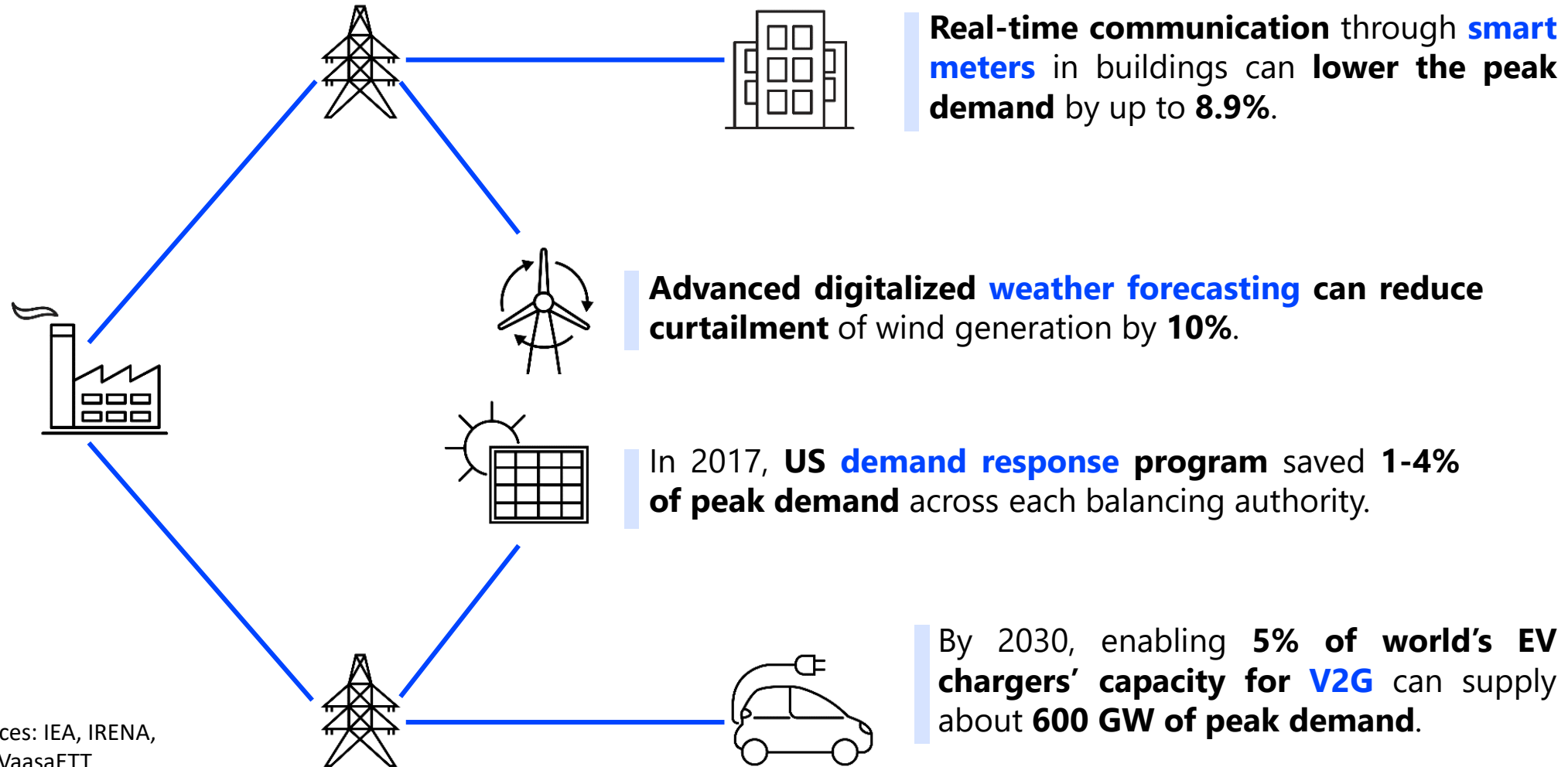
Annual investment in electricity networks by sector in the Stated Policies Scenario



Notes: EV = electric vehicle; 2020e = estimated values for 2020. Digital share includes digital grid infrastructure and EV chargers.

Annual investment in distribution networks nearly doubles in the next 10 years, with as much as a third of all investment directed to digital infrastructure

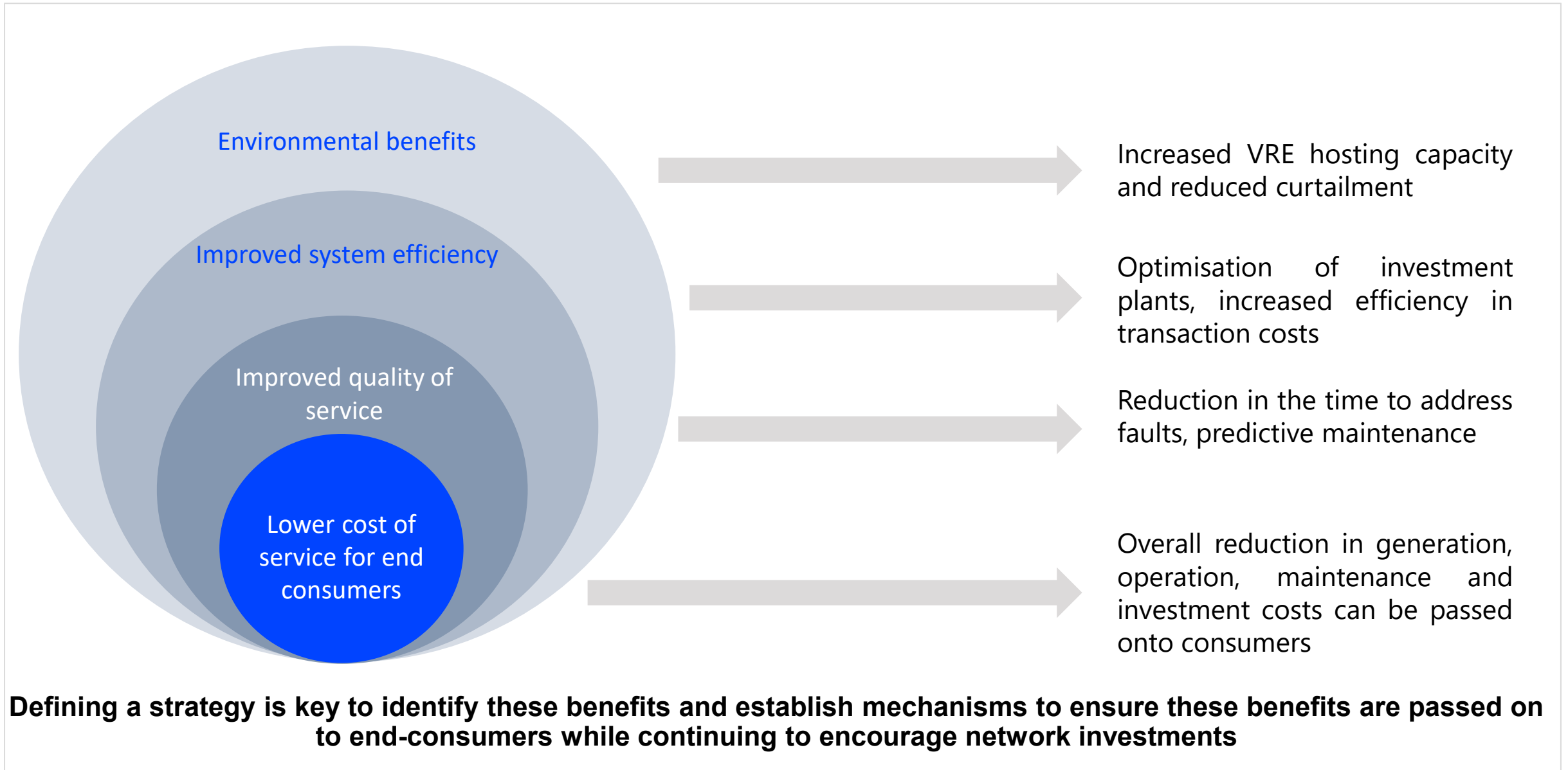
Digitalisation benefits: from source to consumption



Sources: IEA, IRENA, EIA, VaasaETT

Digitalisation can take place at many separate points of the power system. The main advantage comes from the super-additive benefits of coordinating across various levels.

Maximising the benefits of digitalisation in energy transitions



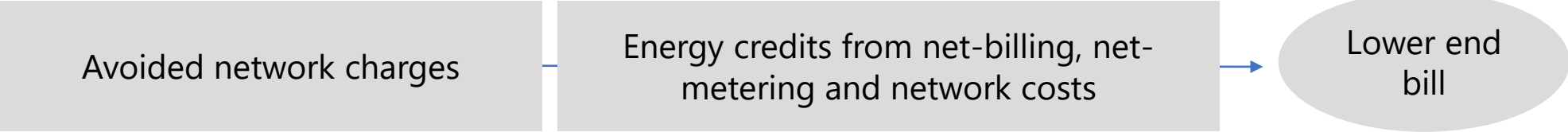
Digitalisation in action, maximising benefits for cost reduction



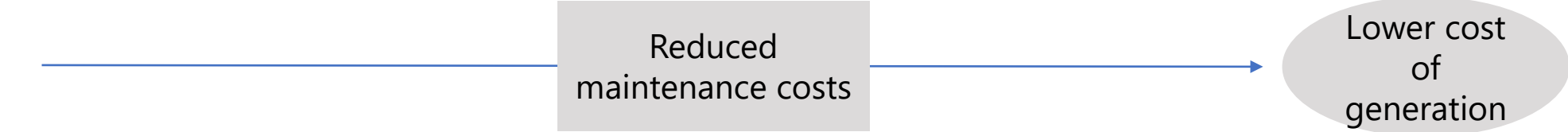
- Customer-side benefits
- Network management
- Accounting and transactions
- System operations



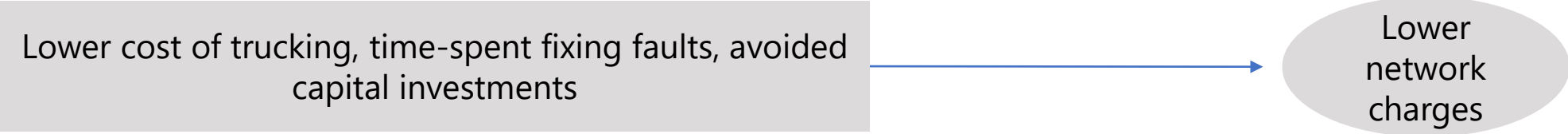
Billing optimisation benefits



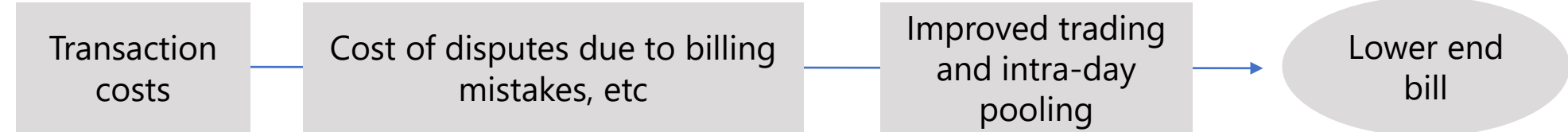
Improved generation O&M



Improved Network O&M



Settlements and back-office



Improved system services



- Digitalisation at various points of the power system can lead to multiple types of benefits, how can the benefits of digitalisation be maximised through strategies?
- Digitalisation in the power system enables links with other sectors of the economy and other areas of policy making, what are some of the considerations to keep in mind when designing digitalisation strategies
- Acceptance and uptake are key for a successful deployment, what are some of the design options out there to ensure users accept and engage with new digitalisation opportunities?
- The shape and benefits of digitalisation depend to a great extent on the local market and system, how are technology providers adapting their products and identifying areas of opportunity?
- What are key elements to ensure it also contributes to other key aspects of energy policy, such as security of supply and cost effectiveness.