Building Resilience of the Power System in the Low-Carbon Transition

Virtual Dialogues on Resilient Infrastructure
28 April 2021

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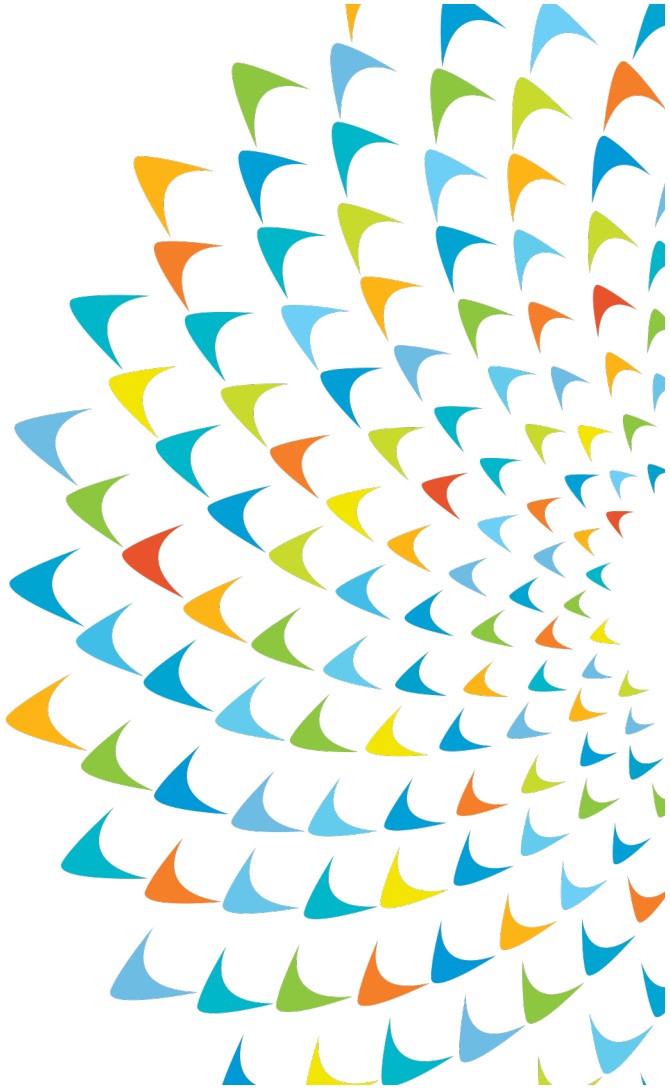


ADB Strategy 2030
7 Operational Priorities:

ENERGY SECTOR PRIORITIES and TARGETS

Overall framework

Deployment of new and advanced technologies will help to achieve energy access and climate mitigation finance targets

Sustainable Development Goal 7
(Affordable and Clean Energy)

Country's NDC* under the Paris Agreement

ADB's climate finance targets

ADB's value addition
Technical innovation
Financing innovation

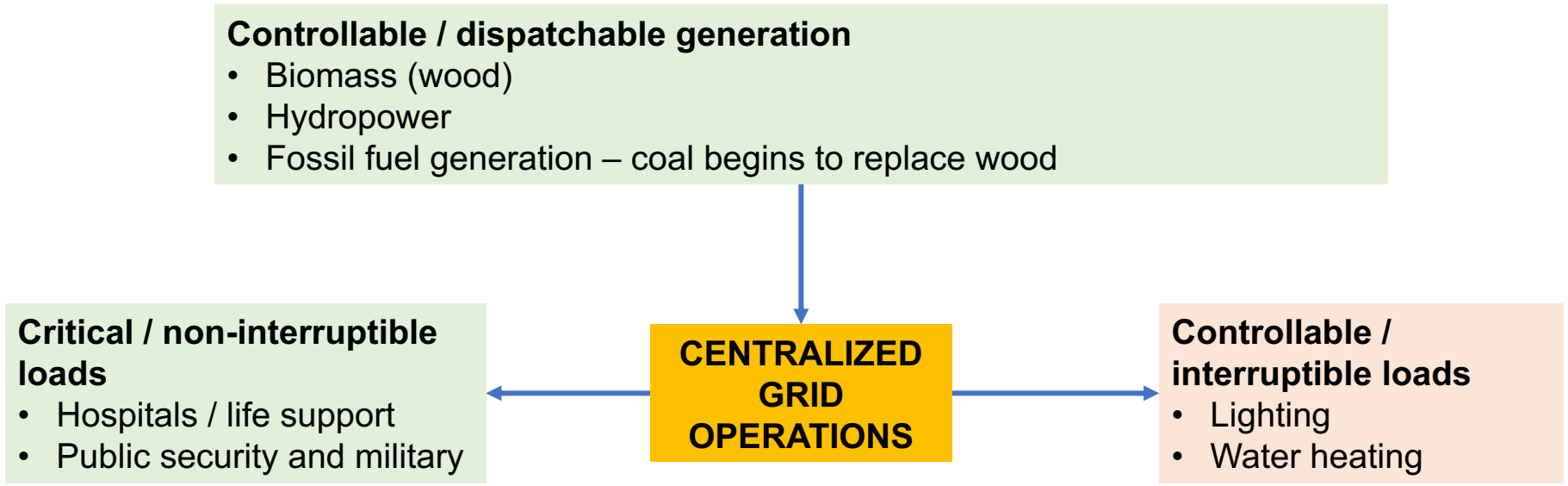
*Nationally Determined Contributions.
CO2 reduction target

Building power system resilience

- Vulnerability assessments => development of resilience plans
- Multiple scenarios for extreme climate and geophysical events (e.g., tsunami):
  - 100-year storm vs. maximum credible event
- Adoption of emergency preparedness, response and recovery strategies – not just for utilities…
  - lessons learned from Fukushima 2011 and Texas/ERCOT 2021
- Smart grids: advanced metering infrastructure, digitization and automation, drone and remote sensing for wide area monitoring applications
- Power infrastructure hardening for climate-proofing, geophysical events, and maintenance (don't forget cybersecurity)
- Diversified / distributed energy mix with flexible operations and storage throughout the system

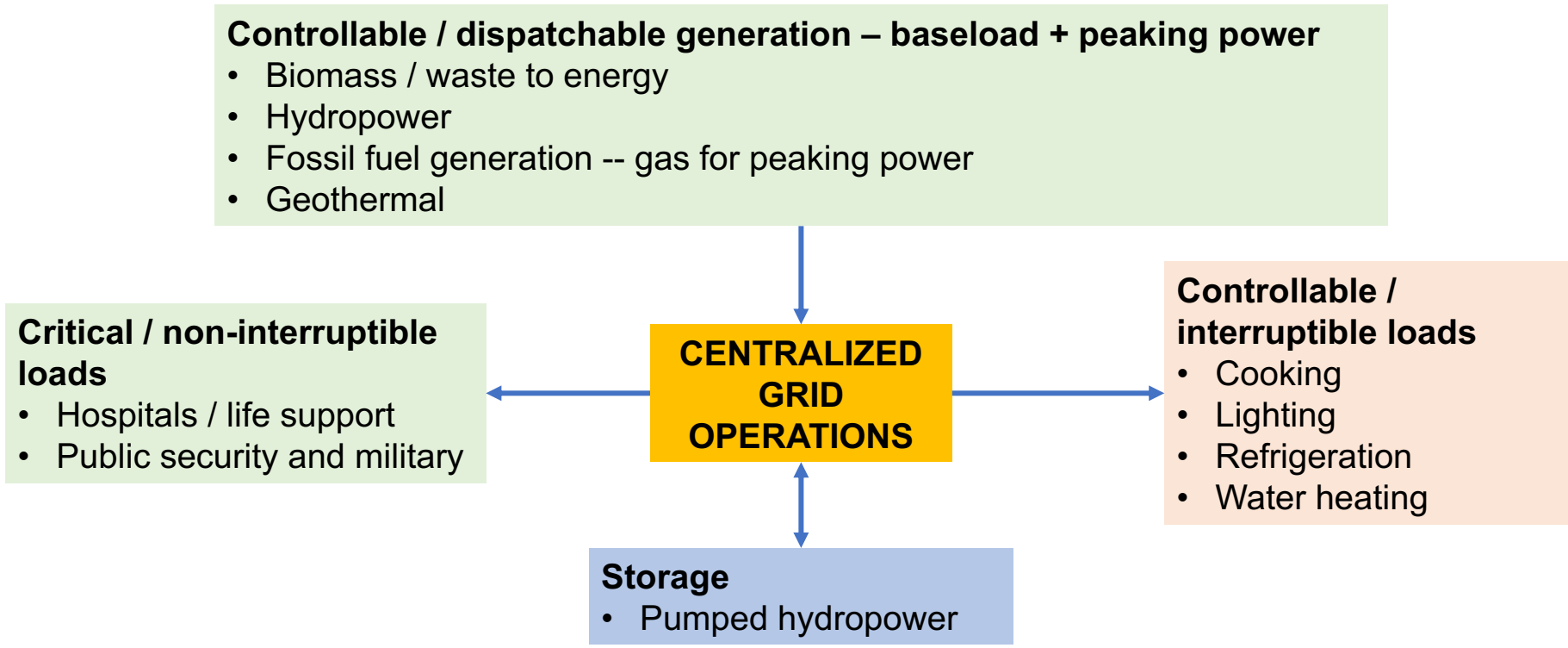
CENTRALIZED GRID MORPHOLOGY

19th century "natural monopoly" design basis (by Thomas Edison *et al*)



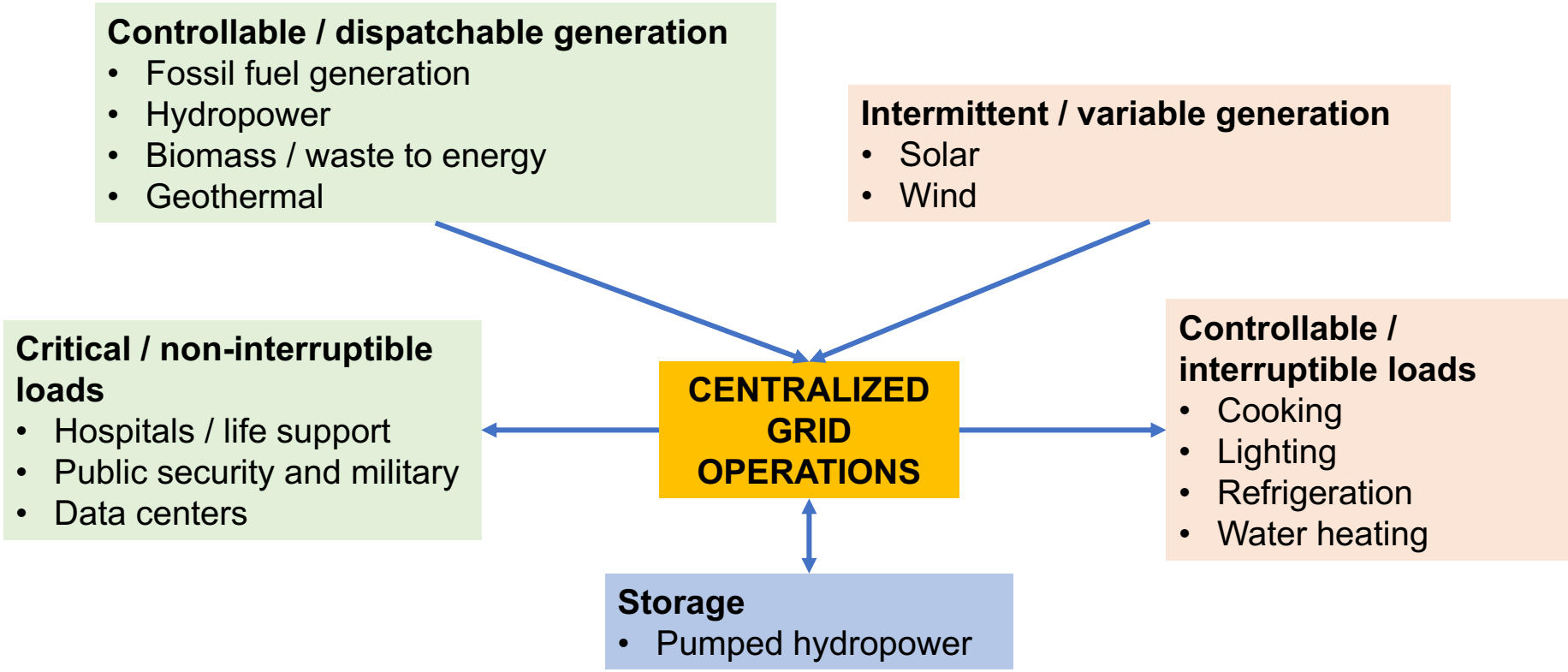
CENTRALIZED GRID MORPHOLOGY

Mid-20th century configuration



CENTRALIZED GRID MORPHOLOGY

late 20th century / early 21st century configuration



URBAN MICRO-GRID MORPHOLOGY 21st century design basis