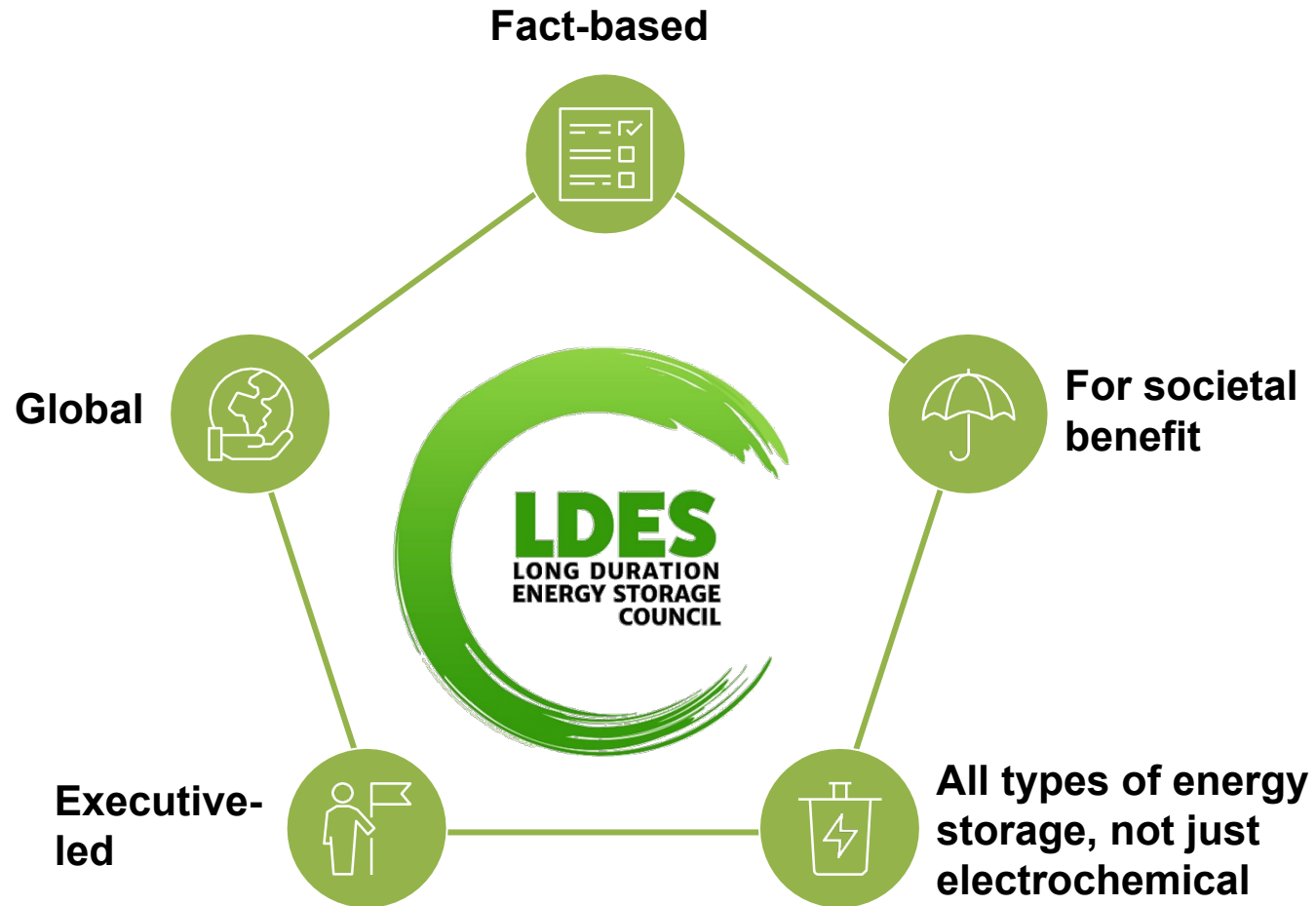




Long Duration Energy Storage (LDES) Council and University of Malta “Policy Planning Session”

13 July, 2023

Key Principles of the LDES Council



The Long Duration Energy Storage Council advances the decarbonization of our world through the acceleration of long-duration energy storage by providing member-driven, fact-based guidance and research on the deployment of long-duration energy storage for society's benefit.

LDES Council Membership

Technology Providers (38)

Thermal



Electrochemical



Mechanical



Chemical



Other



Anchor Members (22)

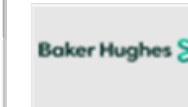
Industry customers



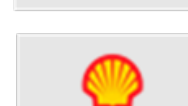
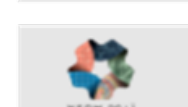
Capital providers



Equipment manufacturers



Energy system integrators & developers



The LDES Council Reports

Net-zero power



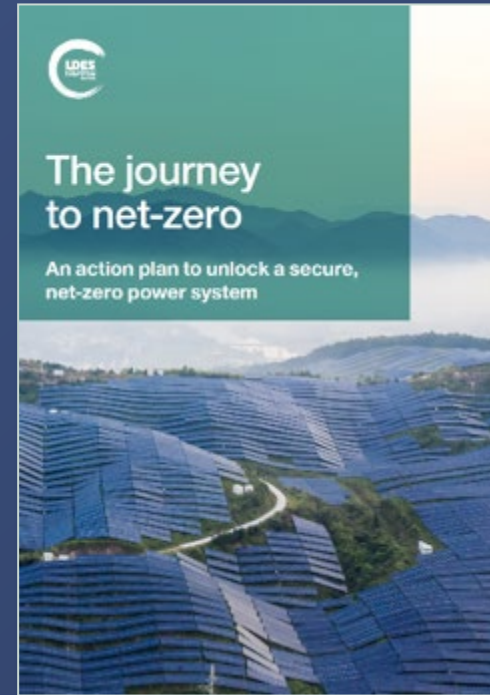
November 2021

24/7 clean PPAs



May 2022

Policy Toolbox



June 2022

Net-zero heat



November 2022

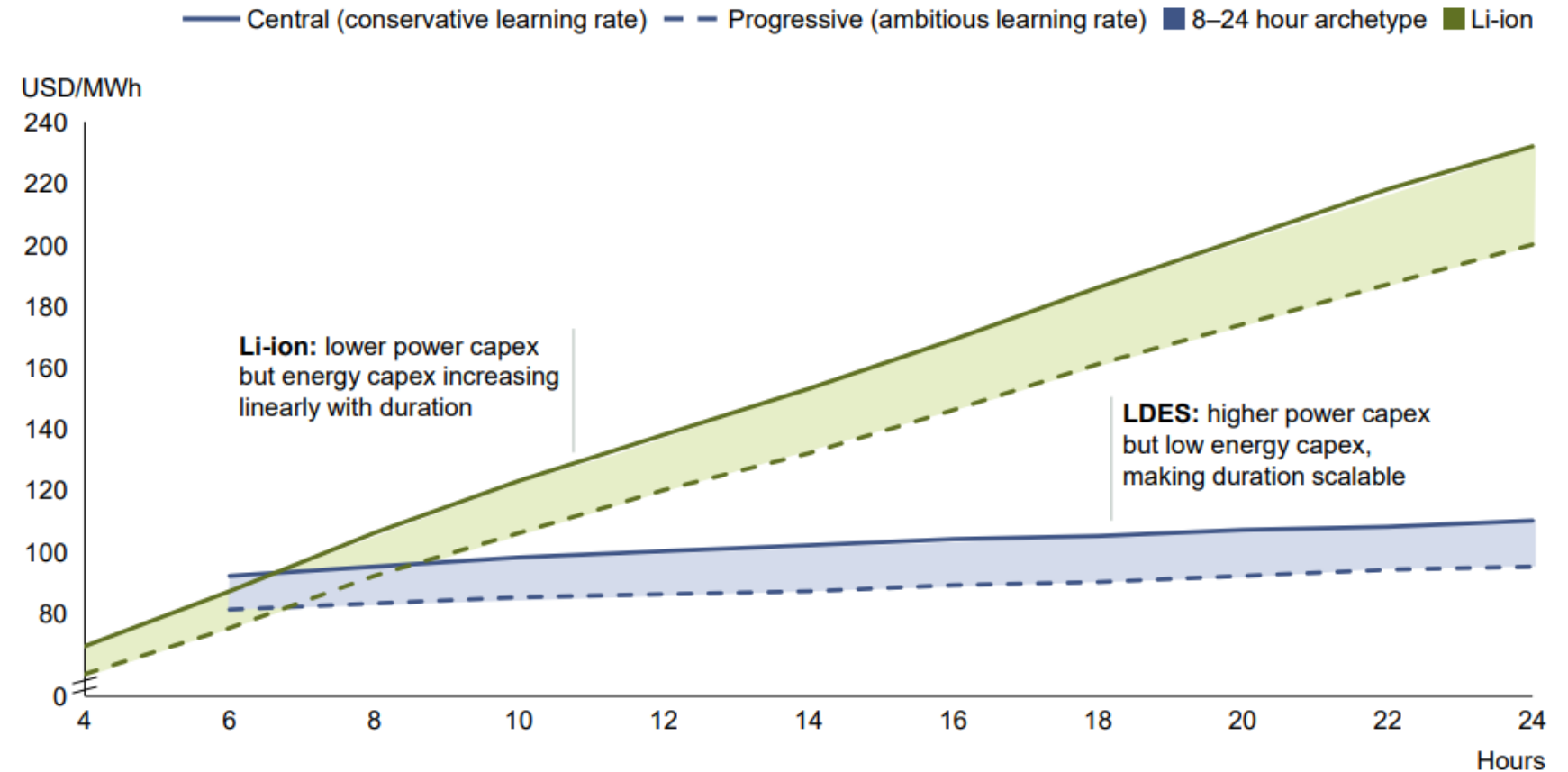
LDES: Flexible to allow for energy shifting yet reliable to replace gas plants

Energy transition increasingly about more than decarbonization – energy security and affordability are key imperatives

Decarbonization of power will create a “flexibility gap”, requiring new resources to balance the net-zero grid – LDES can de-risk the transition

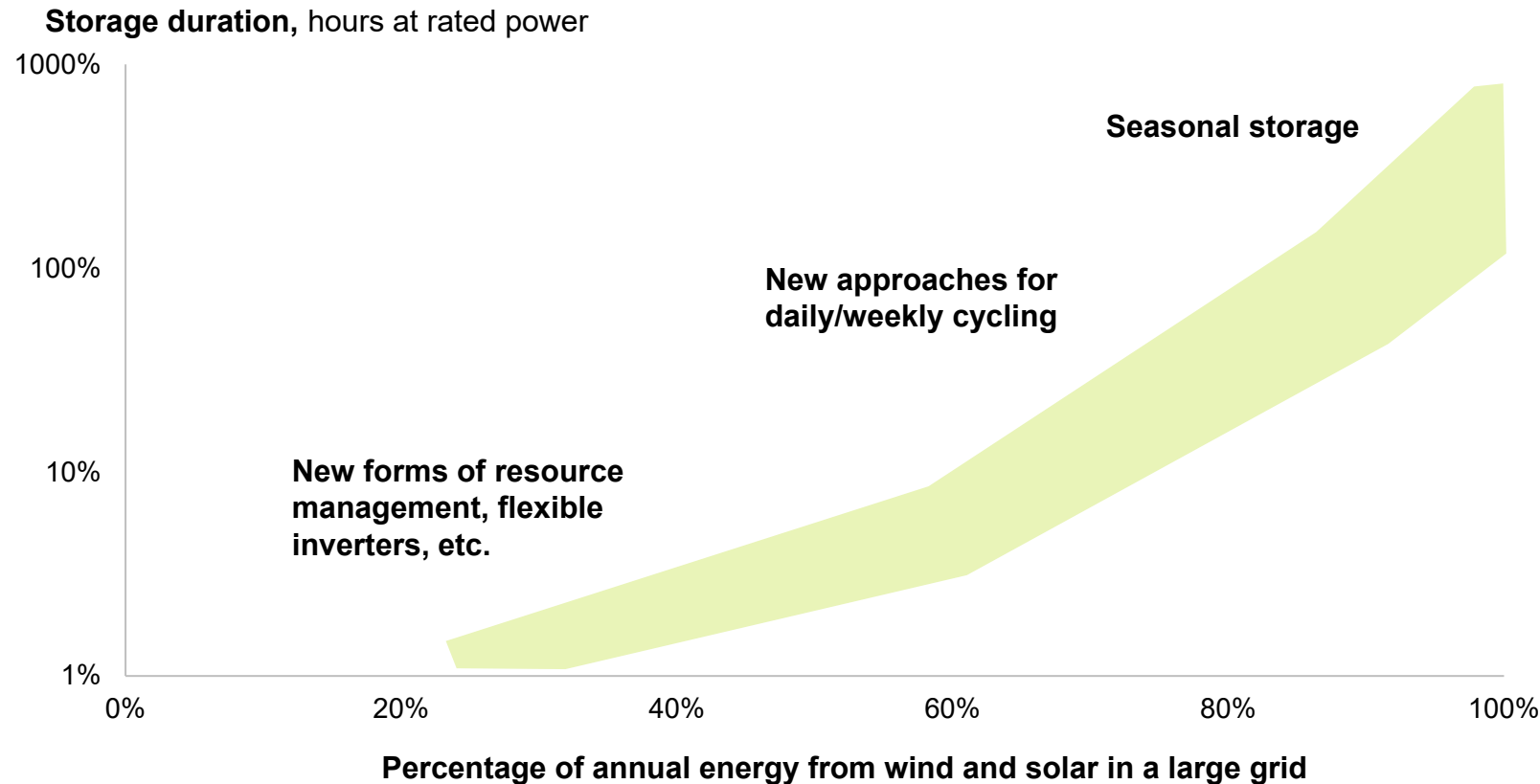
Long Duration Energy Storage (LDES) will be required to get to net-zero power and heat systems

Energy storage LCOS competitiveness by duration for Li-ion and LDES, 2030



Long Duration Energy Storage (LDES) will be required to get to net-zero power systems

Adoption curve of longer flexibility durations accelerates at 60-70% RE penetration



RES integration leads to new system challenges:

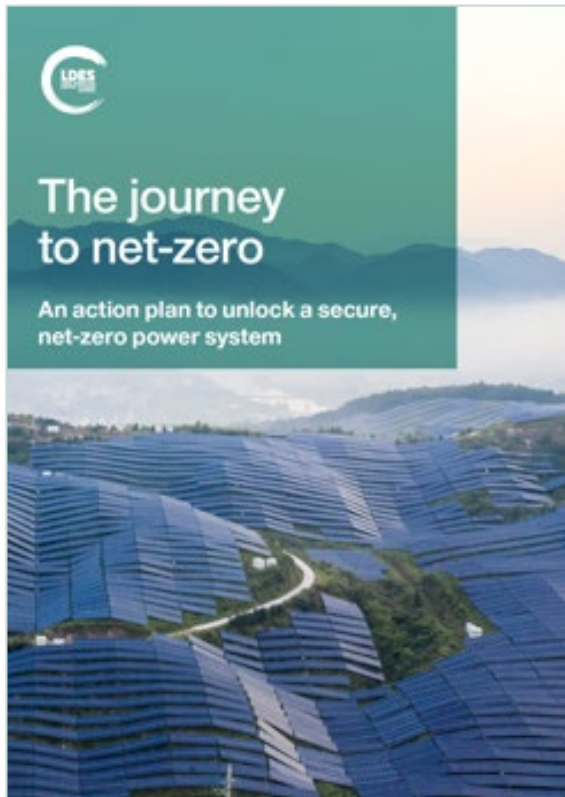
Power supply and demand not always in balance

Transmission flow changes potentially require costly and lengthy transmission upgrades

Retirement of conventional, synchronous generators creates need for new sources of grid support services, e.g., reactive power, inertia

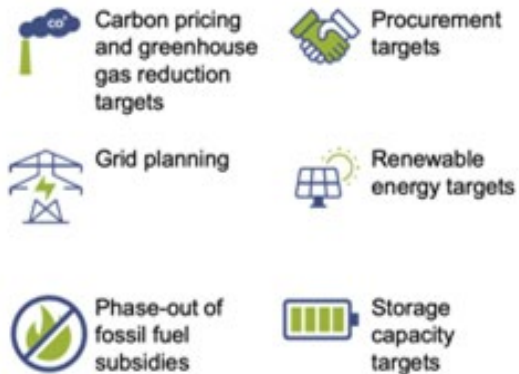
Policy & Regulatory Tools

Key Takeaway: There are a wide range of well-tested tools available to policymakers looking to accelerate the role of LDES in power systems



Long-term market signals

Inform the trajectory of the energy system



Revenue mechanisms

Enhance the viability of projects



Direct technology support and enabling measures

Create pathways for access and uptake





Thank you

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