

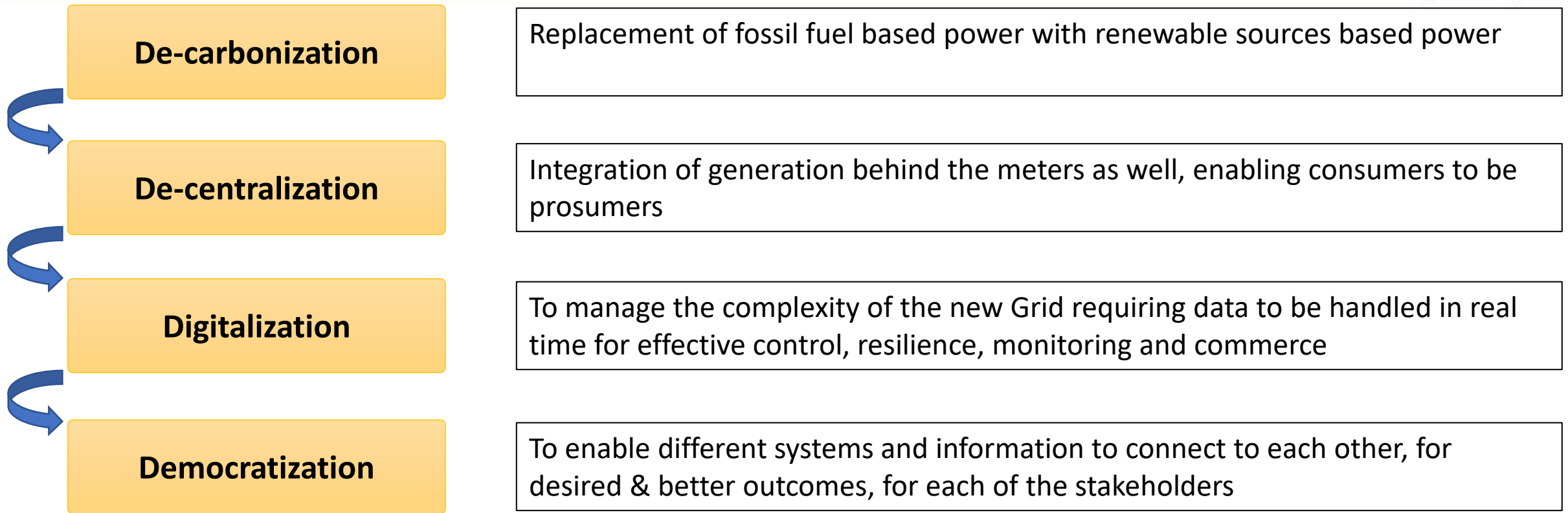
Theme A: Session 2

Evolving Architecture of the Net Zero Power System

Speaker : Amitabh Singhal

*Head of Products (Digital Energy Grid Services),
Larsen & Toubro Limited, PT&D – Digital Energy Solutions*

Evolving Architecture of the Net Zero Power System

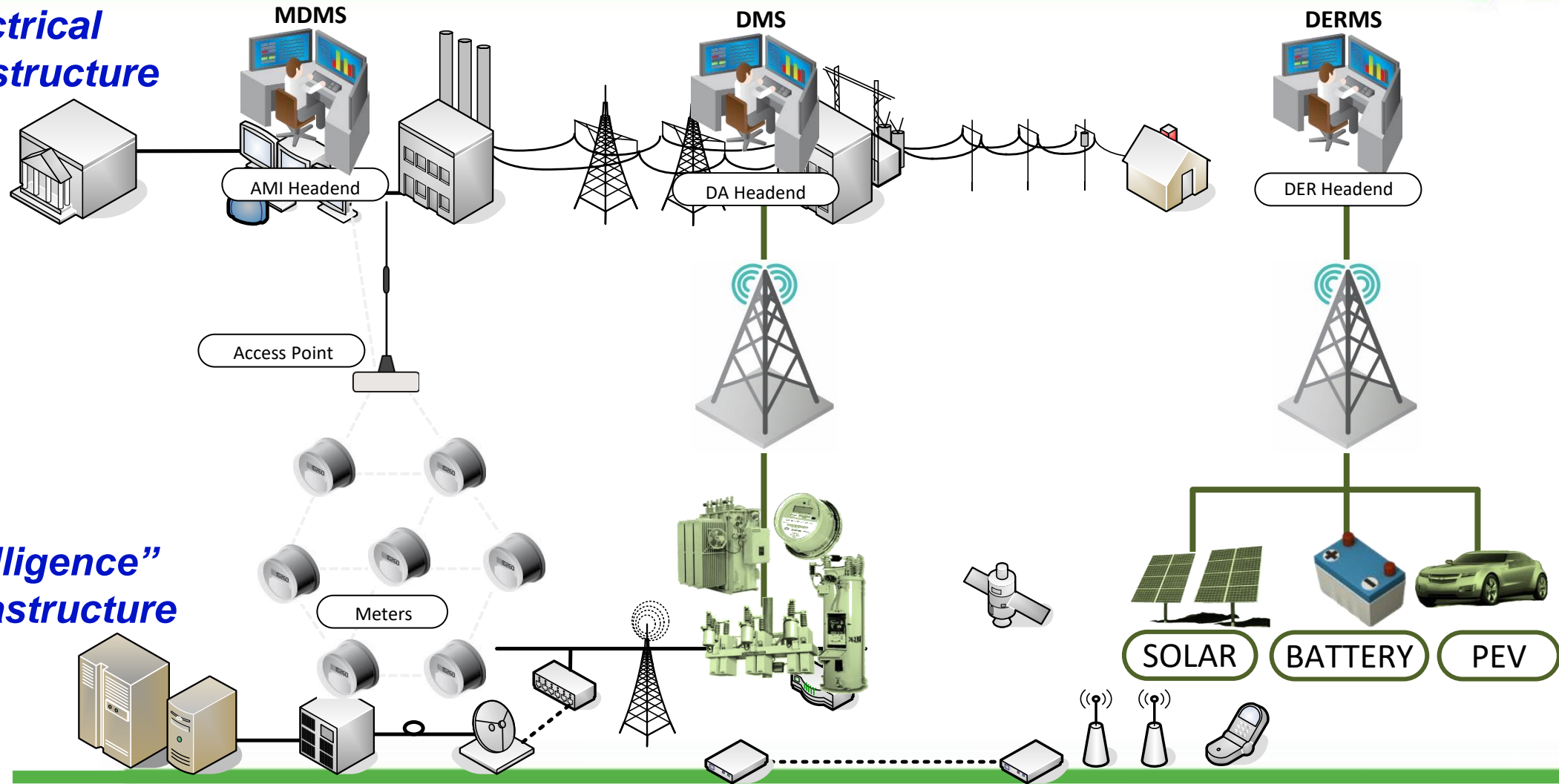


The Context

Realizing the Vision of Smart Grid : From Unconnected to Connected DER

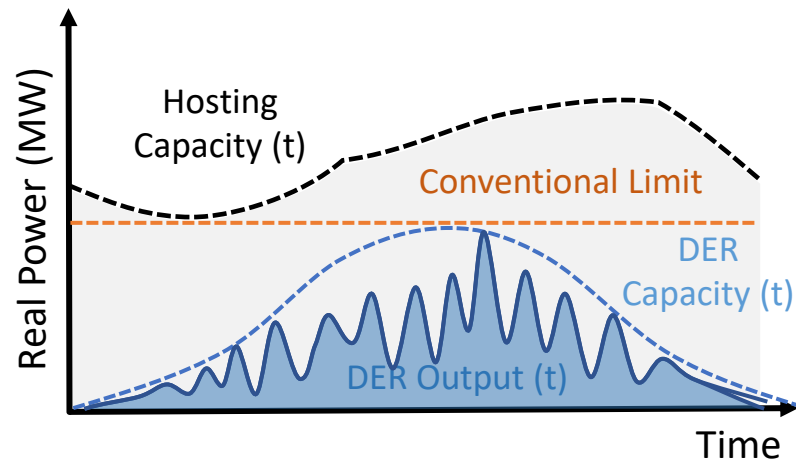
Electrical Infrastructure

“Intelligence” Infrastructure

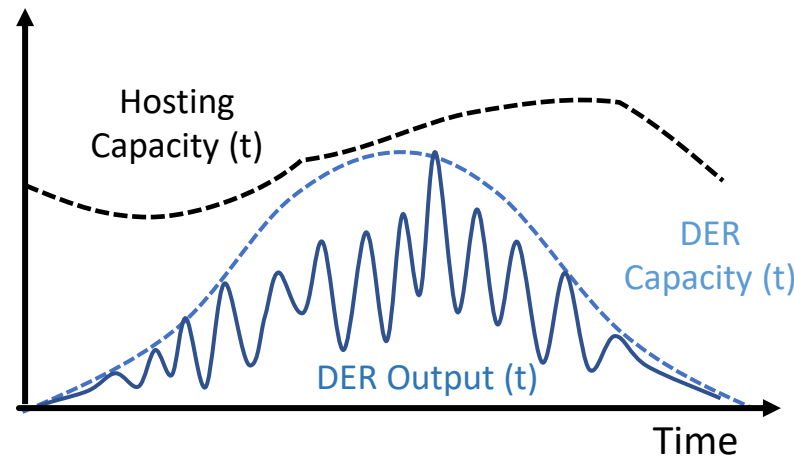


Realizing the Vision of Smart Grid : From Inflexible to Flexible DER Operation

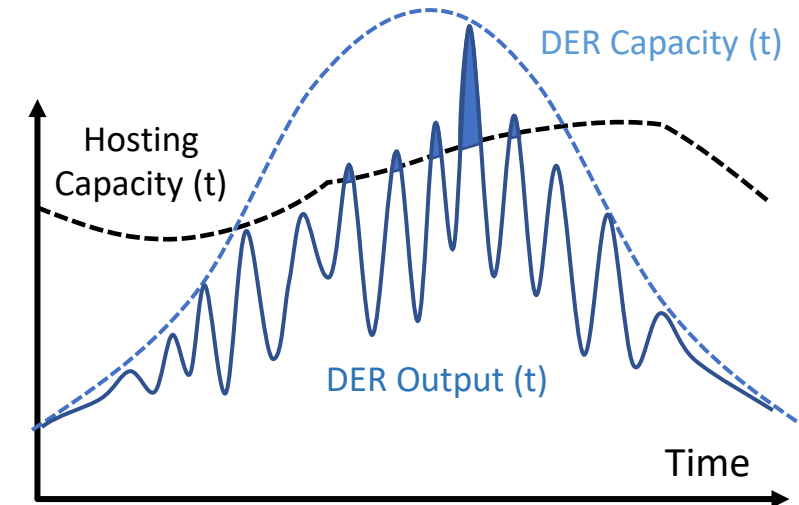
Conventional Interconnection



Resource-Specific Interconnection



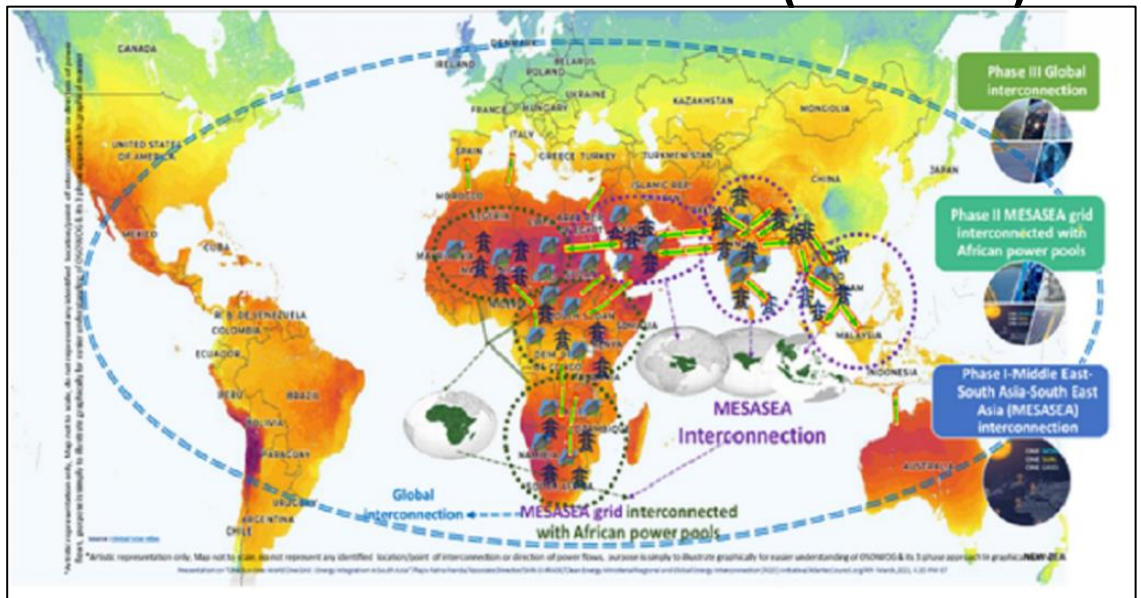
Flexible Interconnection



Maximizing Hostable DER and Distribution Asset Utilization

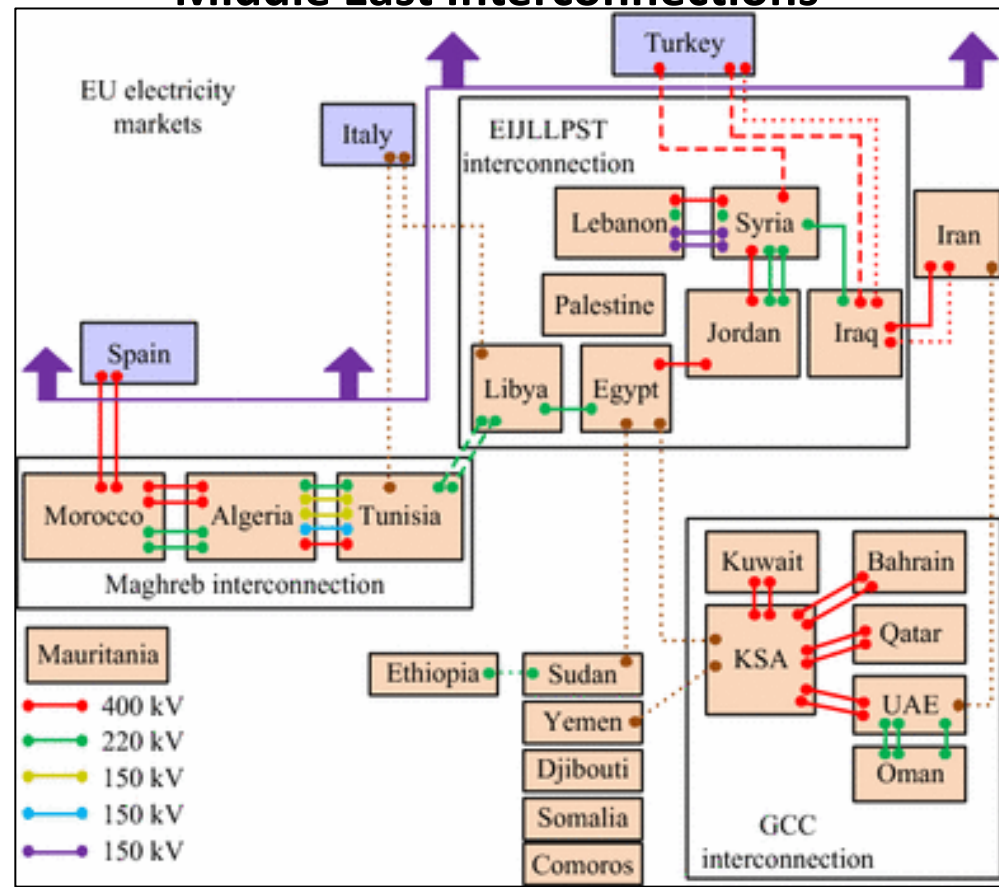
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One Sun One World One Grid (OSOWOG)



<https://www.downtoearth.org.in/blog/renewable-energy/improvising-power-trade-in-south-asia-can-ease-renewable-energy-access-in-the-region-86944>

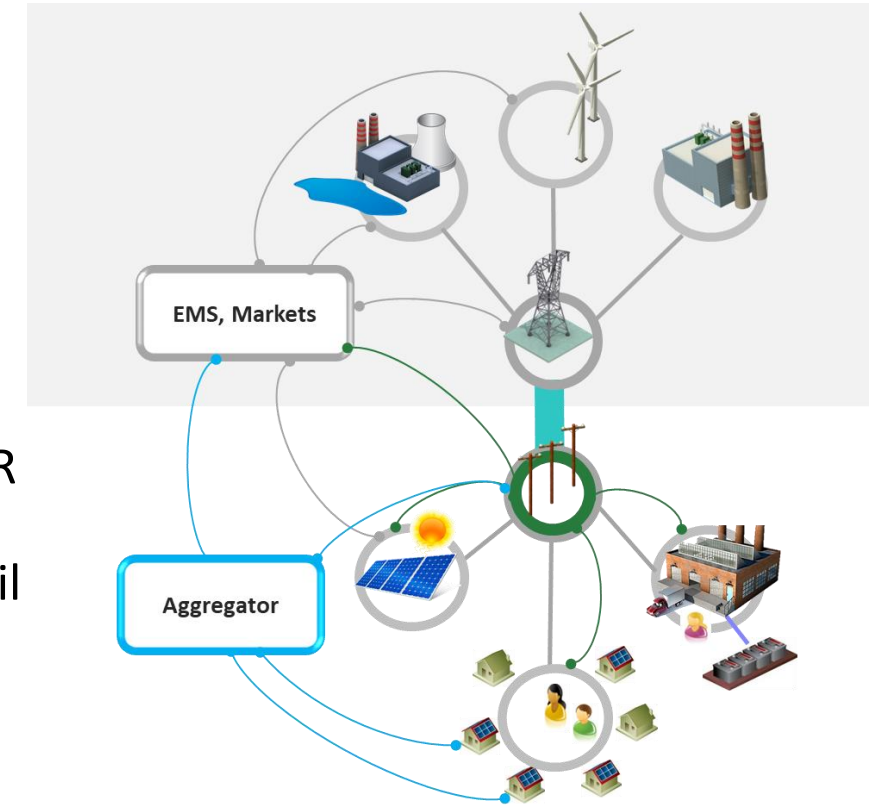
Middle East Interconnections



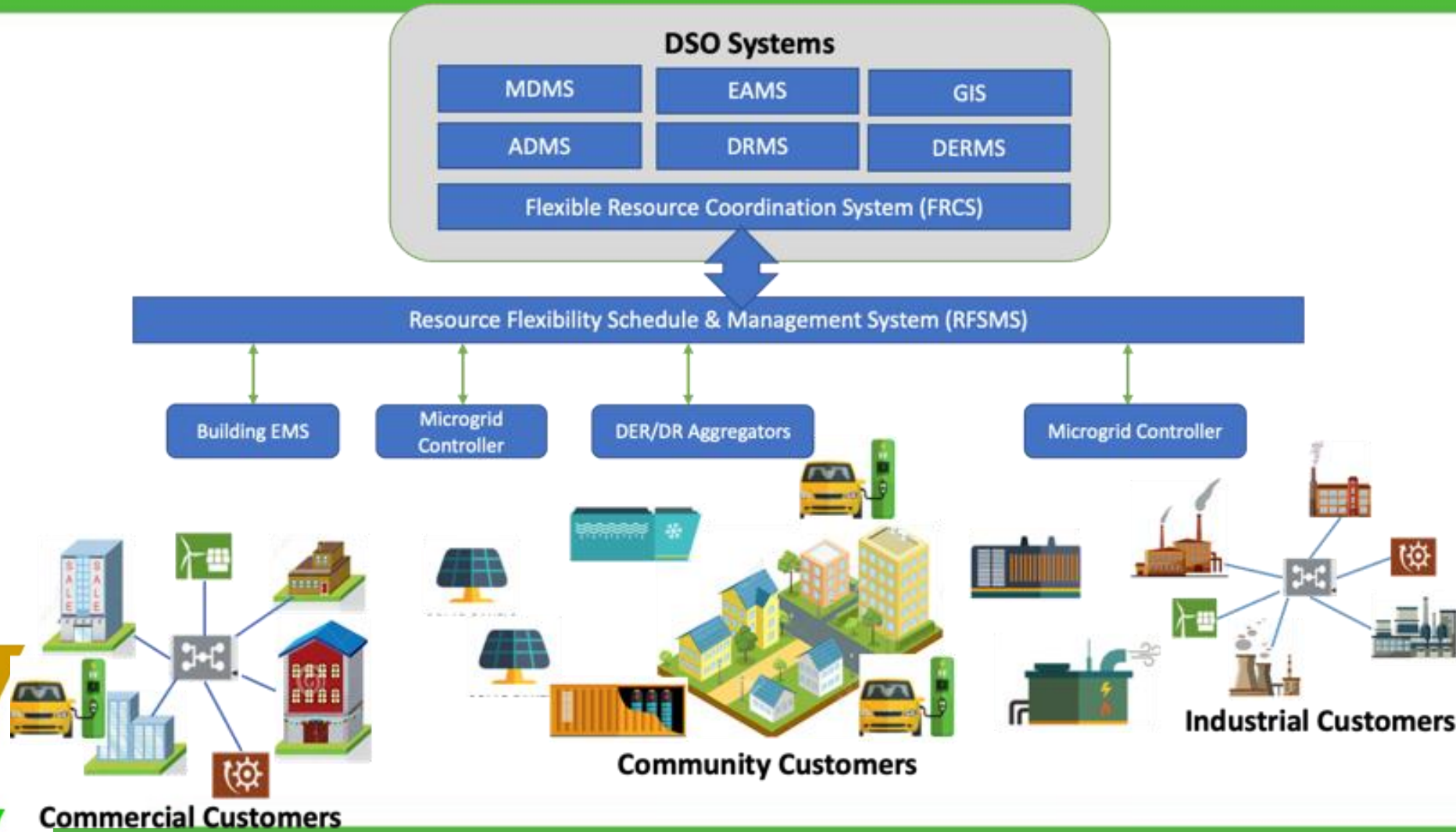
Source : <https://link.springer.com/article/10.1007/s40565-017-0335-7/figures/6>

Key Elements to Change

- **Communications** – From Unconnected to Connected DER
- **Controls** – From Inflexible to Flexible Operation of DER
- **Coordination** – From Local Impacts to Wide Area Impacts due to DER
- **Services** – Interfacing transmission/wholesale with distribution/retail



Solutions to Manage the New Architecture



L&T Solutions for DSO System Implementation

- Microgrid Controller & Microgrid EMS
- Hybrid EMS
- Demand Response Management System
- Asset Performance Monitoring & Management
- EVSE Infrastructure Management System
- Transactive Energy & Asset Management System

Thank You

For discussions/suggestions/queries email: amitabh.singhal@Lntecc.com