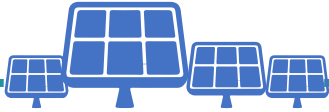


DIGITALIZATION OF ENERGY

Speaker : *Gideon Friedmann*
Acting Chief Scientist
Ministry of Energy

Introduction – Main Trends



**Distributed
Generation**



Technology



**De
Carbonization**



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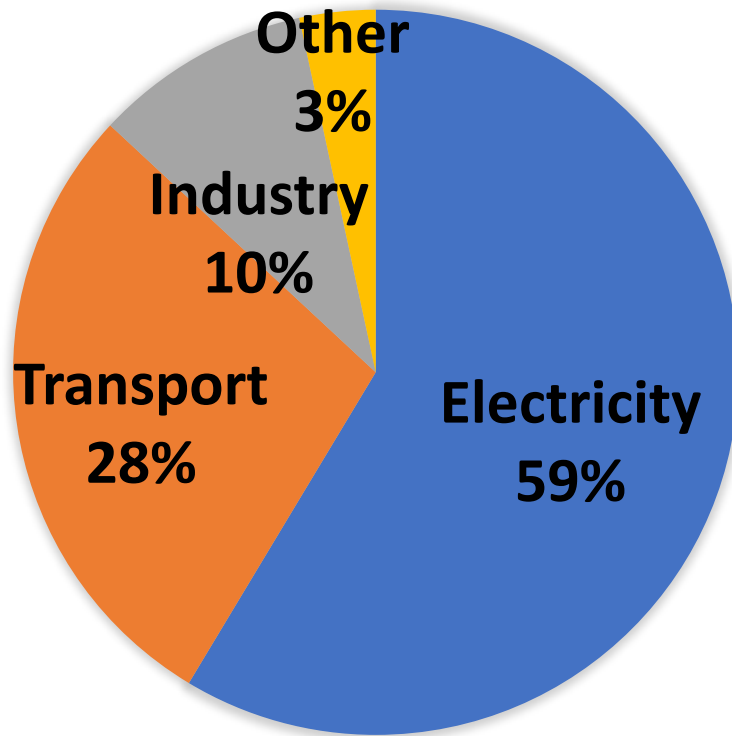
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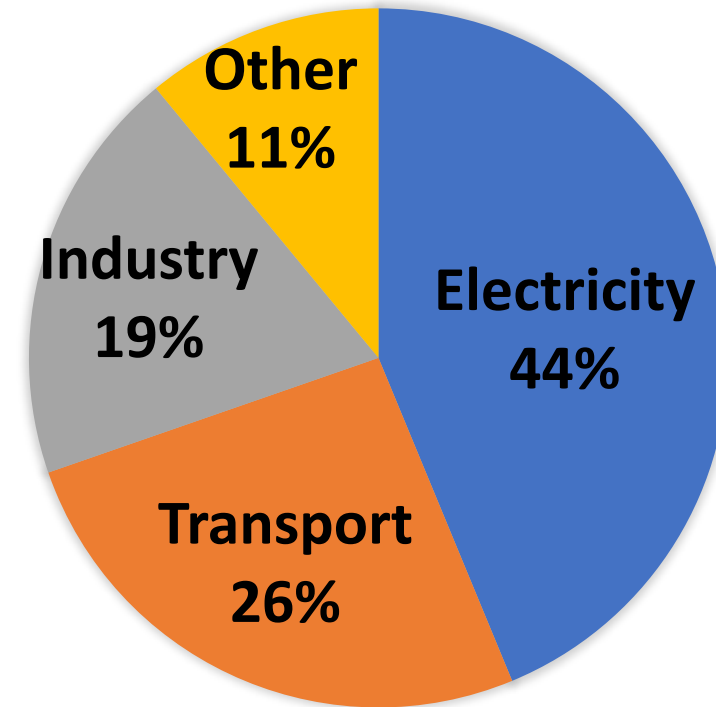
India Smart Utility Week

Context – Israel CO₂ Emissions

CO₂ Emissions Israel (2018 65 Mt)



CO₂ Emissions World (2018 32 Gt)



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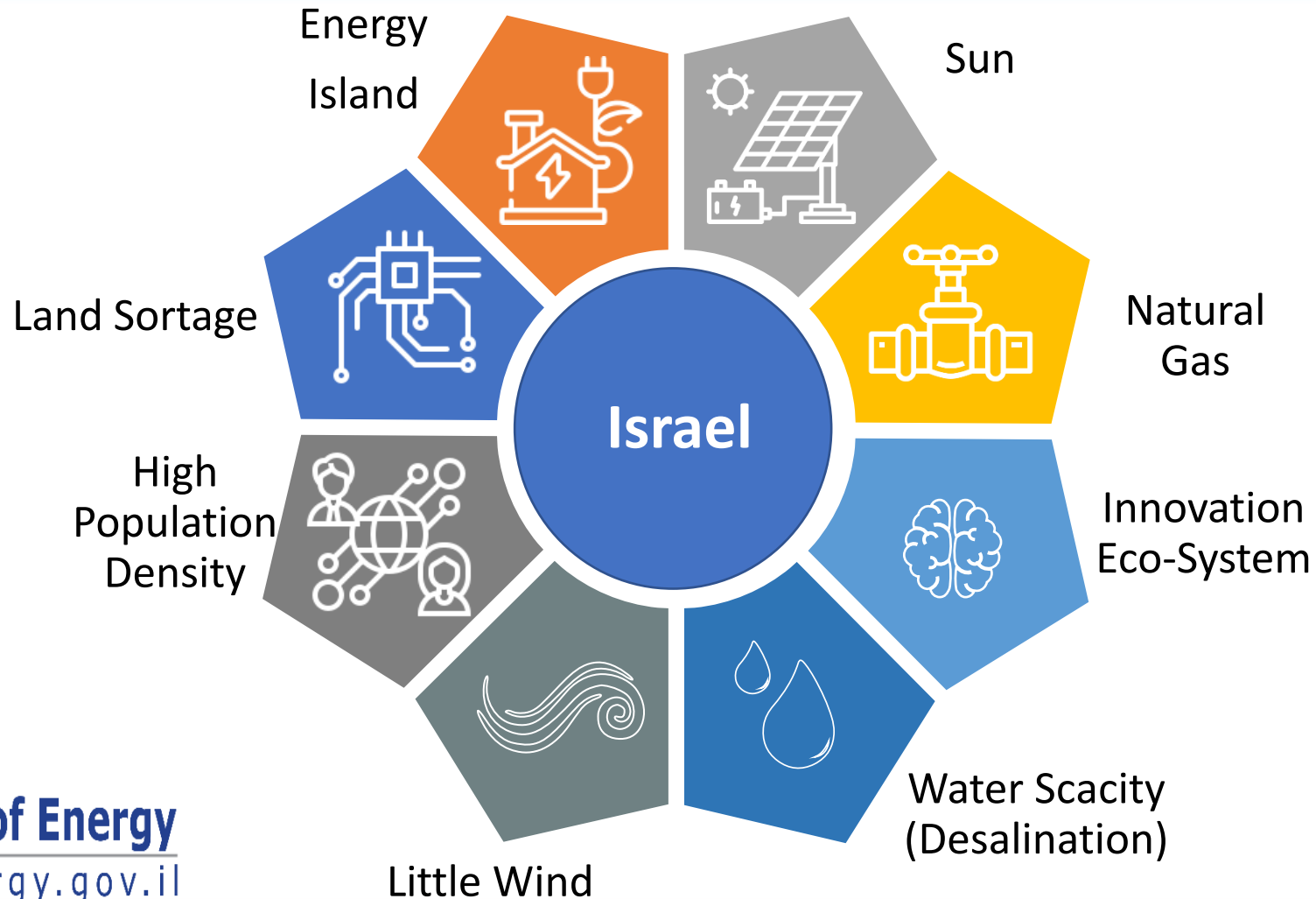


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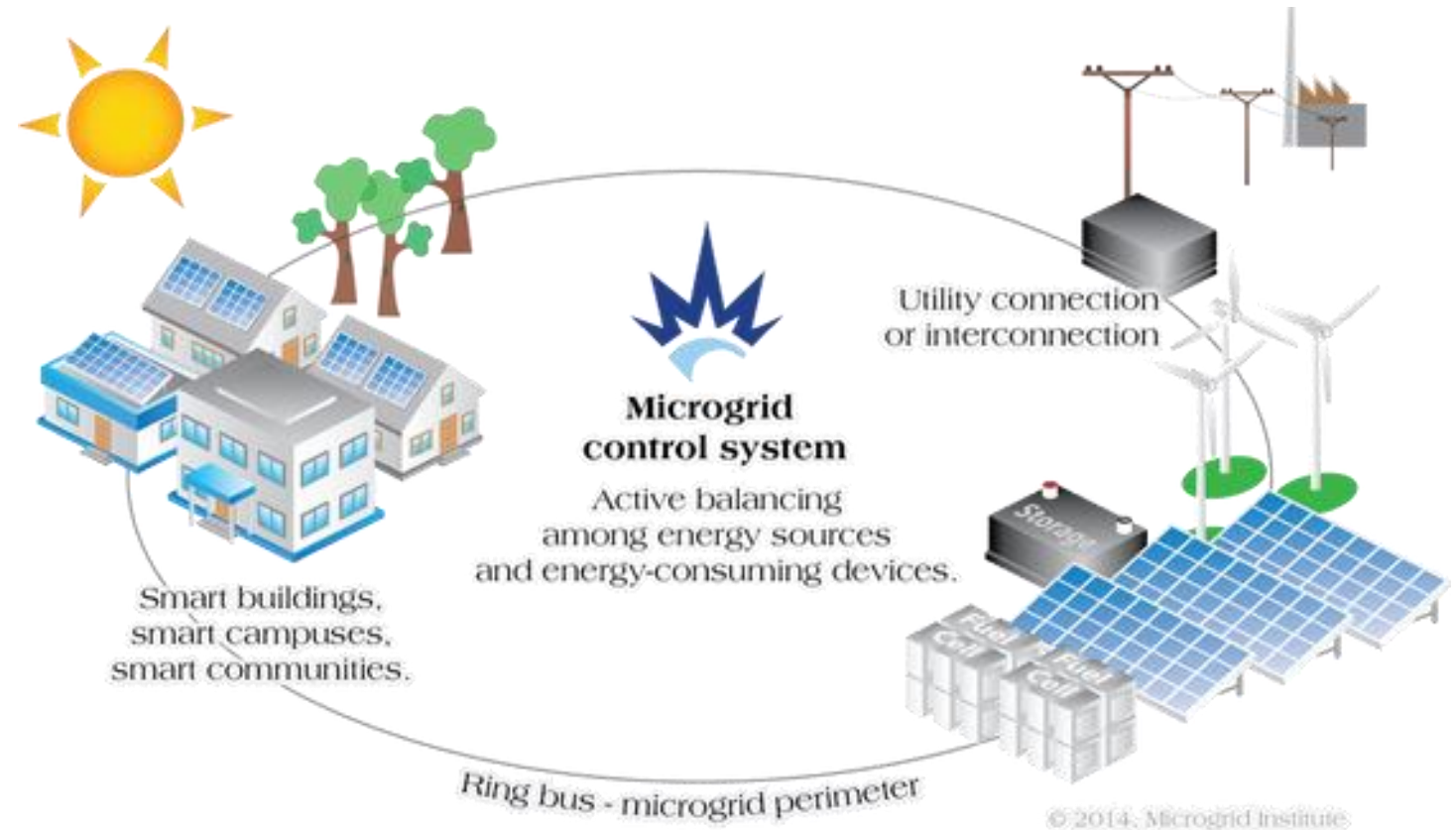
India Smart Utility Week

Context – Israel Components



Digitalization – The Smart Grid

- Searching for **Efficiency, Reliability, Economy**
- But - Struggling



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India Smart Utility Week

The Smart Grid – Drivers

- Storage
- Electric Vehicles



Pilots – EV – The Challenge

- Each AC charging station is 22KW
- 100 cars may need 2MW.
- But Average daily drive is only about 50KM – or 10KWh
- So average consumption over 10 Hours may be 1-2KW only
- Total will be 200 KW
- But occasionally need more.

Pilots - EV

- Managed Charging Station in large parking lots - 2020
- In collaboration with IEC
- 2 projects, multiple buildings – at least 20 cars / building
- Approximately \$0.35 Million in support
- One connection to the building – managed charging through it
- Flexible automatic System from IEC side

Pilots - Microgrid

- Microgrid w Storage projects 2021
- 8 projects w a \$13 Million budget
- Support of almost \$3.5 Million
- Residential , Industrial, and combined cases.

Digitalization – The Smart Grid

- There is no **Renewable Energy** w/o the smart grid
- There are no **Electric Vehicles** w/o the smart grid
- **The smart grid is an enabling infrastructure!!**

2018

- Convergence of technologies
 - Sensors
 - Digitalization (control & structure – NFT, BC
 - Big Data



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India Smart Utility Week

Thank You

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