Baker McKenzie.

Renewables 2.0: 2nd Annual Global Renewable Energy Conference

Mandarin Oriental New York

April 4, 2018

Agenda

1	Welcome and Presentation of Smart Power Revolution Thought Leadership Report
2	Morning Keynote Address
3	New Technologies and Their Impact on Renewable Power
4	Renewable Storage and Its Financing
5	Offshore Wind Lessons and Market Opportunities
6	Afternoon Keynote Address: Best Practices in Corporate Sustainability and Renewables
7	Smart Cities and Their Renewable Energy Underpinnings
8	What is the Future of the Energy System and Will Renewables be the Disruptor?
9	Renewables Around the World
10	Update on Renewables in the US

Welcome and Presentation of Smart Power Revolution Thought Leadership Report

Marc Fèvre
Baker McKenzie, London

Morning Keynote Address

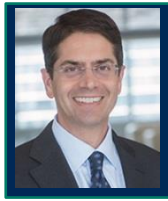
Michael Polsky
Invenergy

James P. O'Brien
Baker McKenzie, Chicago
Moderator

New Technologies and Their Impact on Renewable Power

Pauline Doohan
SolarReserve

Peter George
Baker McKenzie, Chicago



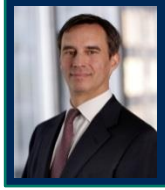
Jai Khanna
Baker McKenzie, Chicago

Dan Shreve
MAKE Consulting

Marc Fèvre
Baker McKenzie, London
Moderator

Renewable Storage and its Financing

Dan Cary
Macquarie Capital (USA) Inc.



Alfred Griffin
NY Green Bank

Jonathan Poor
ENGIE Storage

Jeff Russell
Baker McKenzie, San Francisco

Evelyn Kim
Baker McKenzie, San Francisco
Moderator

Baker McKenzie.

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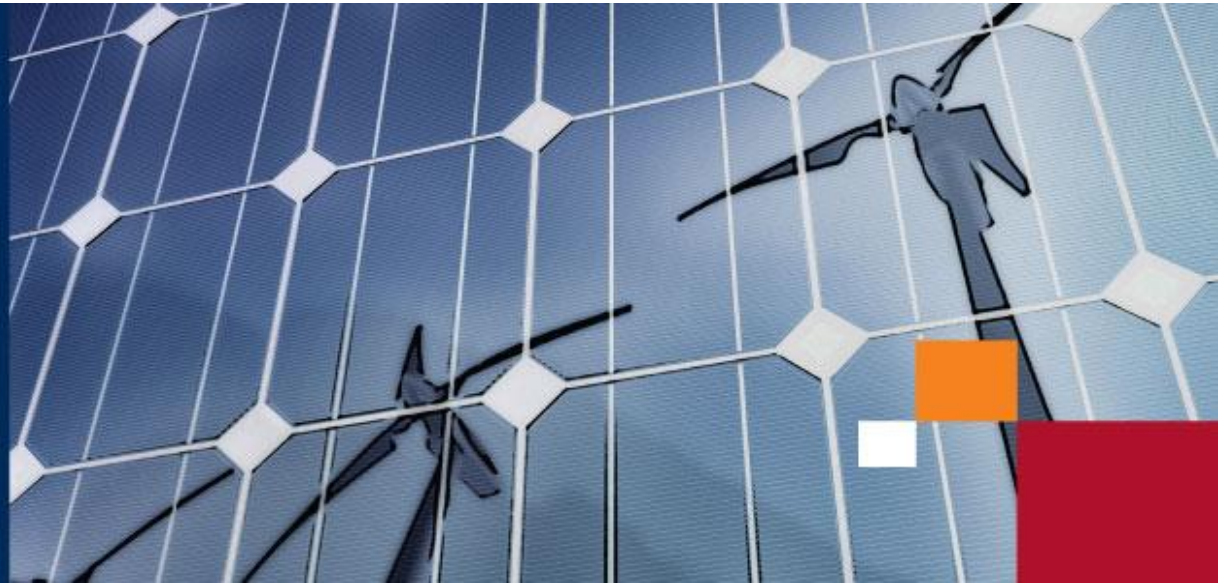

Offshore Wind Lessons and Market Opportunities

Naoaki Eguchi
Baker McKenzie, Tokyo

Brook Knodel
Mott MacDonald

Brad Nicpon
Baker McKenzie, Toronto

Martin David
Baker McKenzie, Singapore
Moderator

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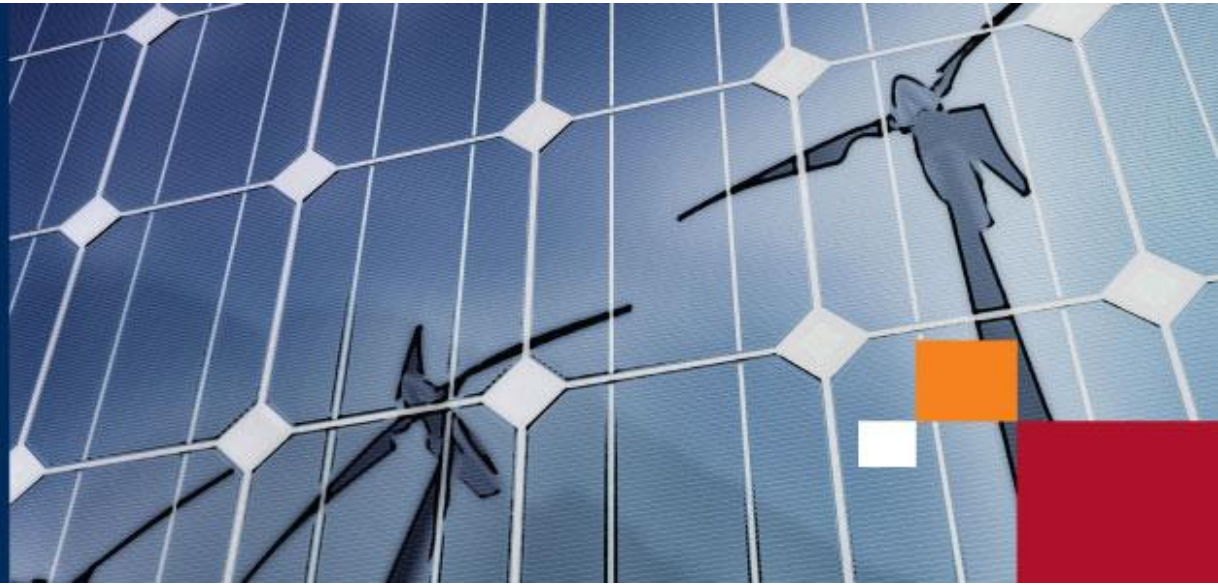
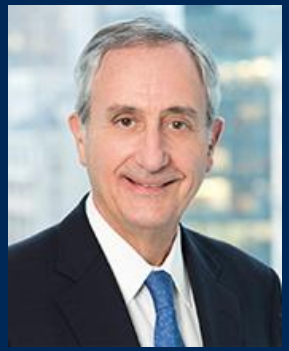


Afternoon Keynote Address: Best Practices in Corporate Sustainability and Renewables

Ran Tao
Estée Lauder Companies



Skip Rankin
Baker McKenzie, New York
Moderator

Smart Cities and Their Renewable Energy Underpinnings

Enrique Castillo
Banco Sabadell Miami

Michael Delucia
Sidewalk Labs

Maxine Ethier
Baker McKenzie, Toronto

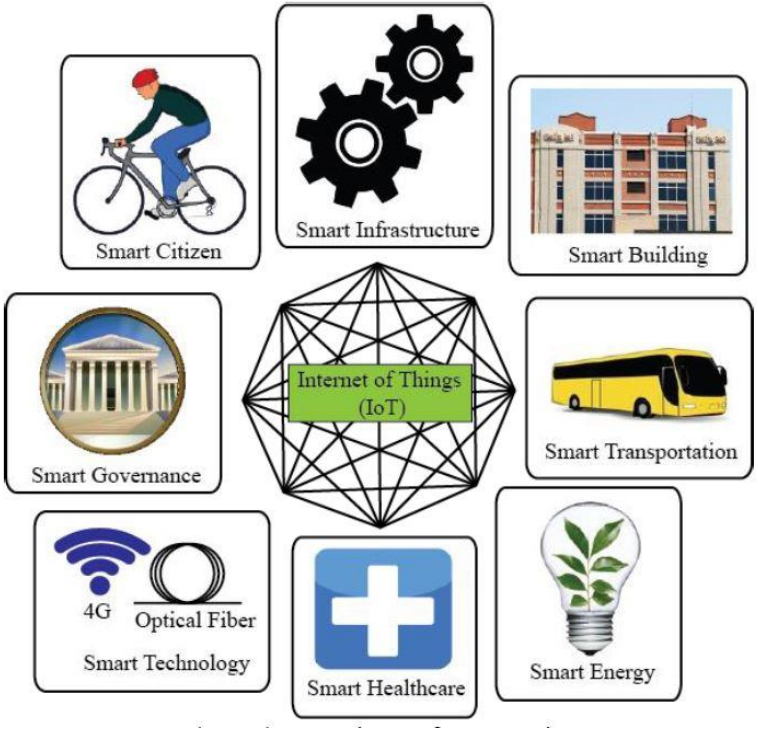
Stephan Feilhauer
Macquarie Capital

Paula Moreno
HERE Technologies

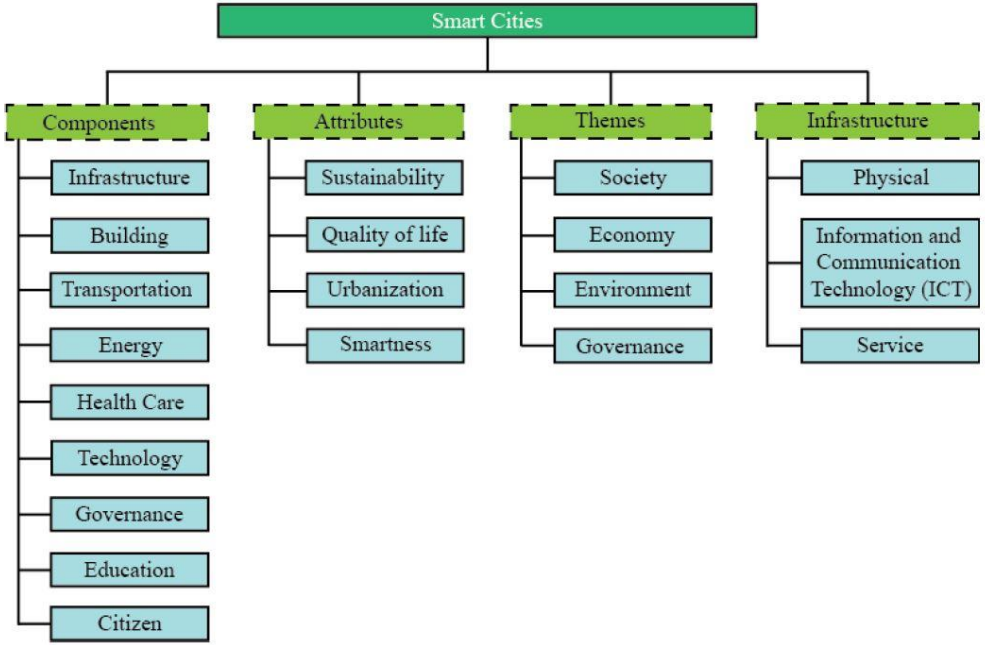
José Morán
Baker McKenzie, Chicago
Moderator

Smart Cities and Their Renewable Energy Underpinnings

Smart Cities: What are they?



Mohanty, Choppali, Kougianos, *Everything You wanted to Know about Smart Cities*
http://www.smohanty.org/Publications_Journals/2016/Mohanty_IEEE-CEM_2016-July_Smart-Cities.pdf



Mohanty, Choppali, Kougianos, *Everything You wanted to Know about Smart Cities*
http://www.smohanty.org/Publications_Journals/2016/Mohanty_IEEE-CEM_2016-July_Smart-Cities.pdf

Smart Cities: Why needed?

75% of world's resources and energy

Cities Today

80% of greenhouse gases

Urban Population (% of Total): 1960 - 2016

The United Nations Population Division's World Urbanization Prospects. **License** : CC BY-4.0
https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?end=2016&start=1960&view=chart

What is the Future of the Energy System and Will Renewables Be the Disruptor?

Neil Gerber
IBM Global Markets

Sanjay Khanna
Baker McKenzie Whitespace Legal Collab

Michael Quinn
Oncor Electric Delivery

Patrick Woodson
E. ON North America

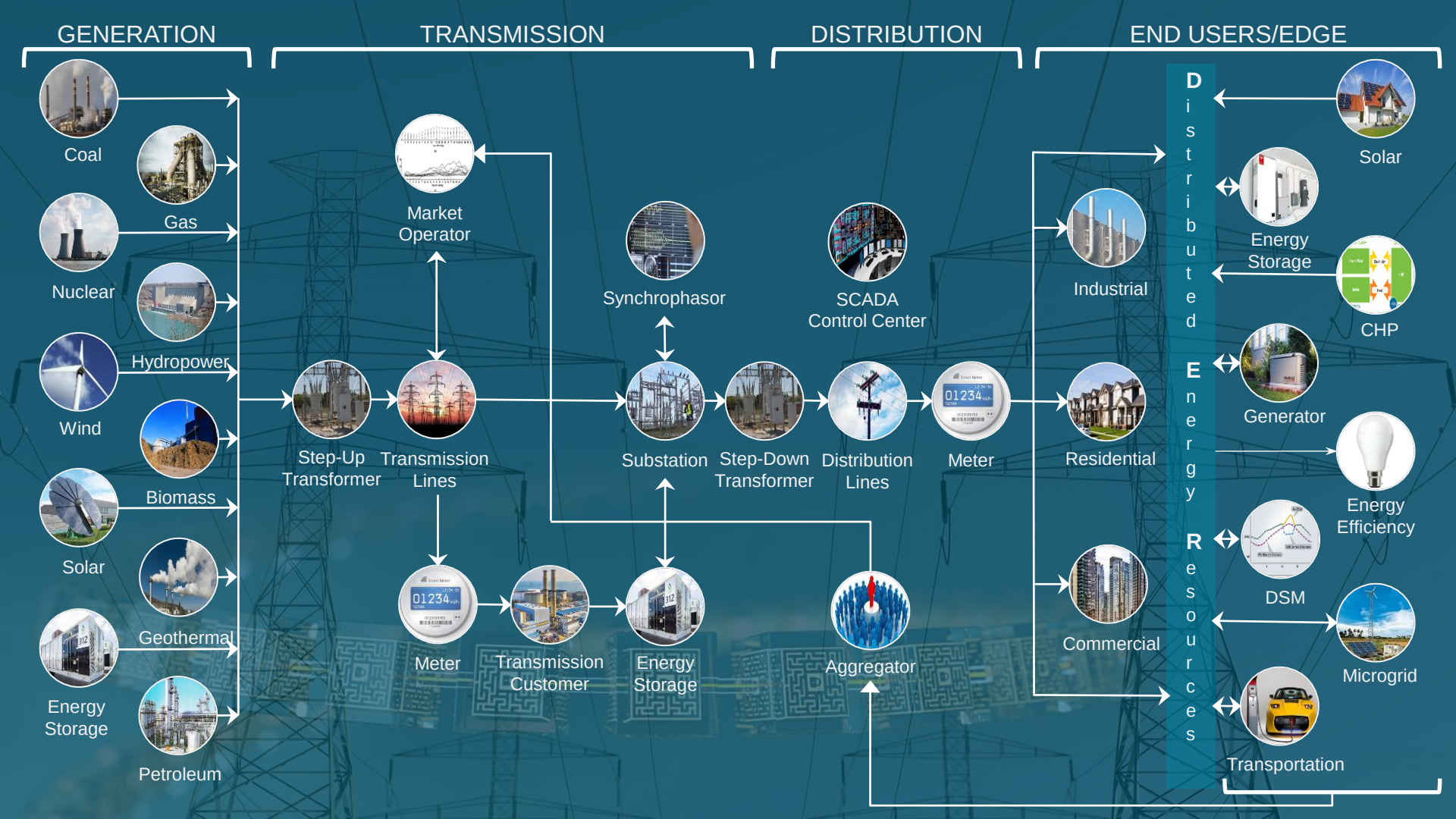
Mona Dajani
Baker McKenzie, Chicago
Moderator

Blockchain Consortia use cases

Energy, Environment & Utilities industry

Neil Gerber, IBM Global Markets

March 2018


GENERATION
TRANSMISSION
DISTRIBUTION
END USERS/EDGE
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Energy Storage
Petroleum
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Step-Up Transformer
Transmission Lines
Meter
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Energy Storage
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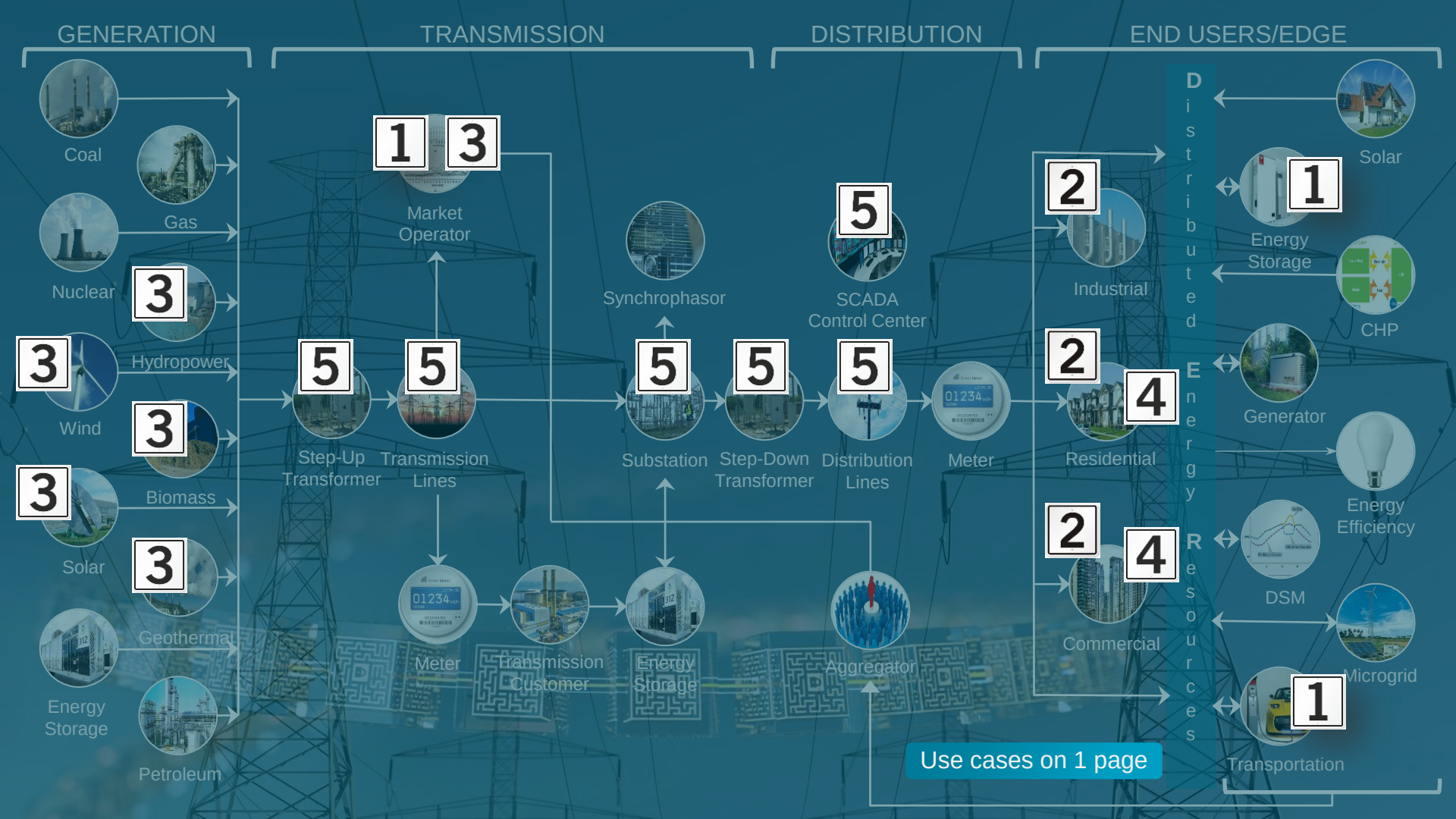
DSM
Microgrid
Transportation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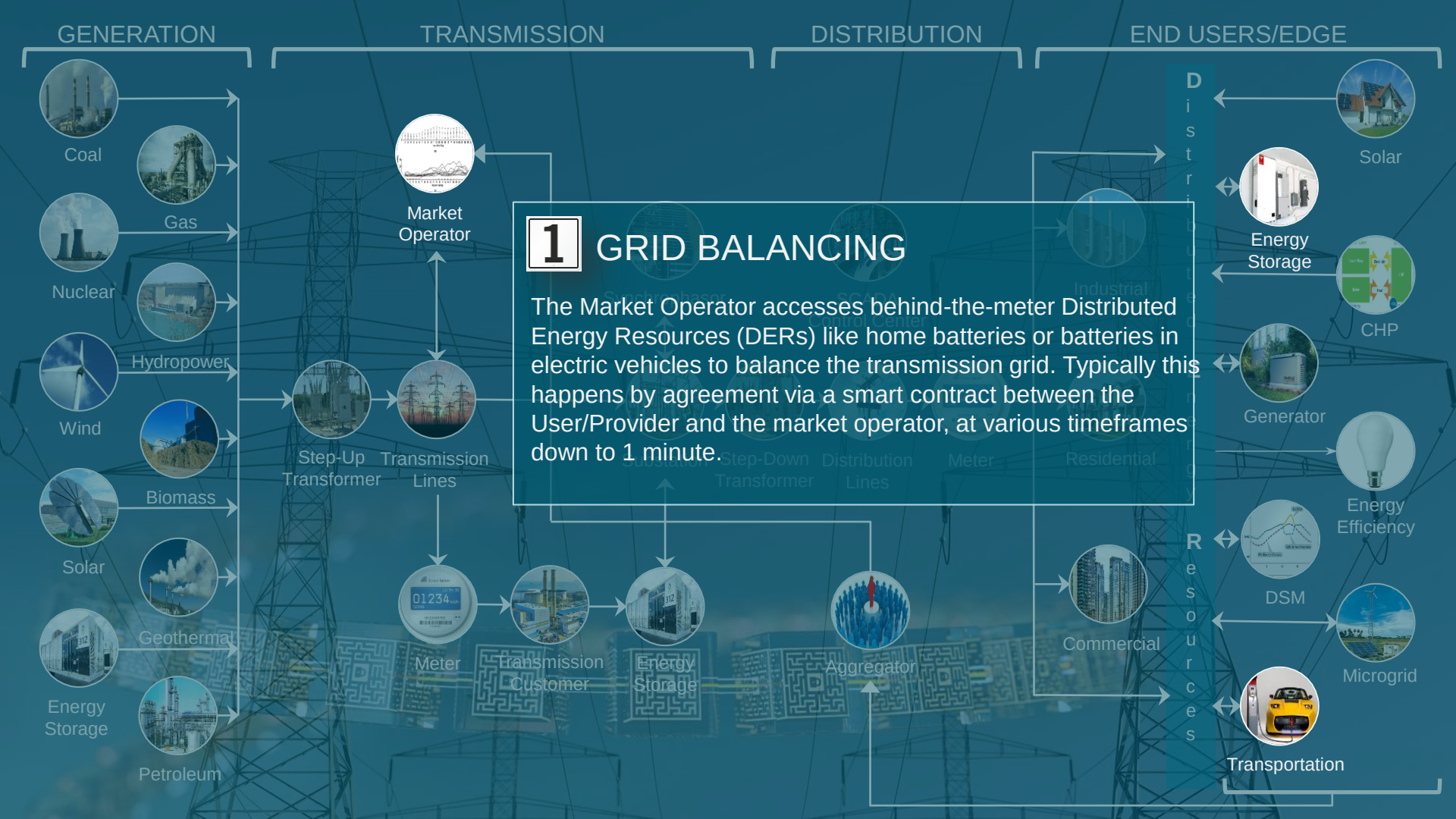
Use cases on 1 page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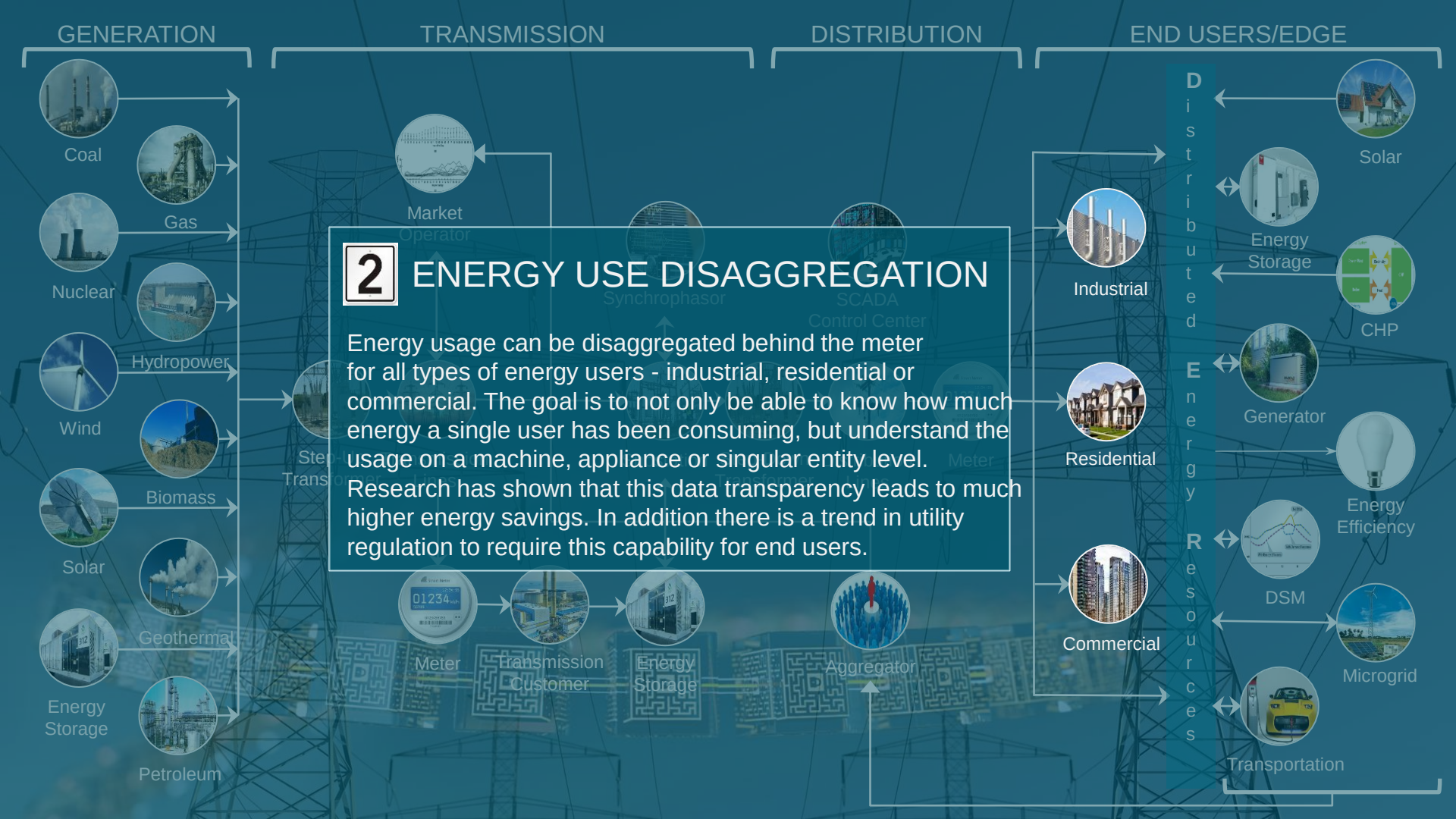
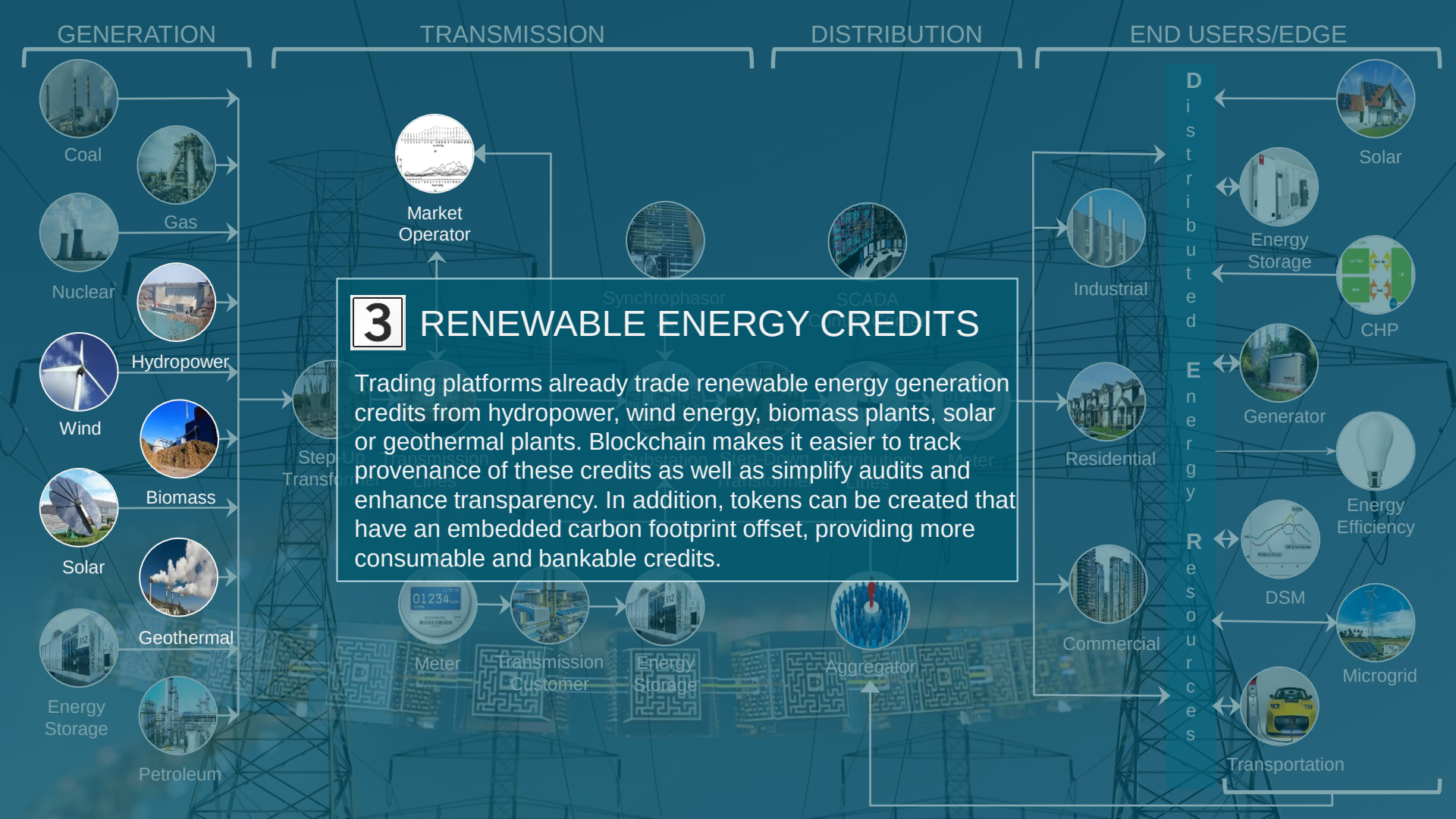
1
GRID BALANCING
The Market Operator accesses behind-the-meter Distributed Energy Resources (DERs) like home batteries or batteries in electric vehicles to balance the transmission grid. Typically this happens by agreement via a smart contract between the User/Provider and the market operator, at various timeframes down to 1 minute.



2 ENERGY USE DISAGGREGATION

Energy usage can be disaggregated behind the meter for all types of energy users - industrial, residential or commercial. The goal is to not only be able to know how much energy a single user has been consuming, but understand the usage on a machine, appliance or singular entity level. Research has shown that this data transparency leads to much higher energy savings. In addition there is a trend in utility regulation to require this capability for end users.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3 RENEWABLE ENERGY CREDITS
Trading platforms already trade renewable energy generation credits from hydropower, wind energy, biomass plants, solar or geothermal plants. Blockchain makes it easier to track provenance of these credits as well as simplify audits and enhance transparency. In addition, tokens can be created that have an embedded carbon footprint offset, providing more consumable and bankable credits.


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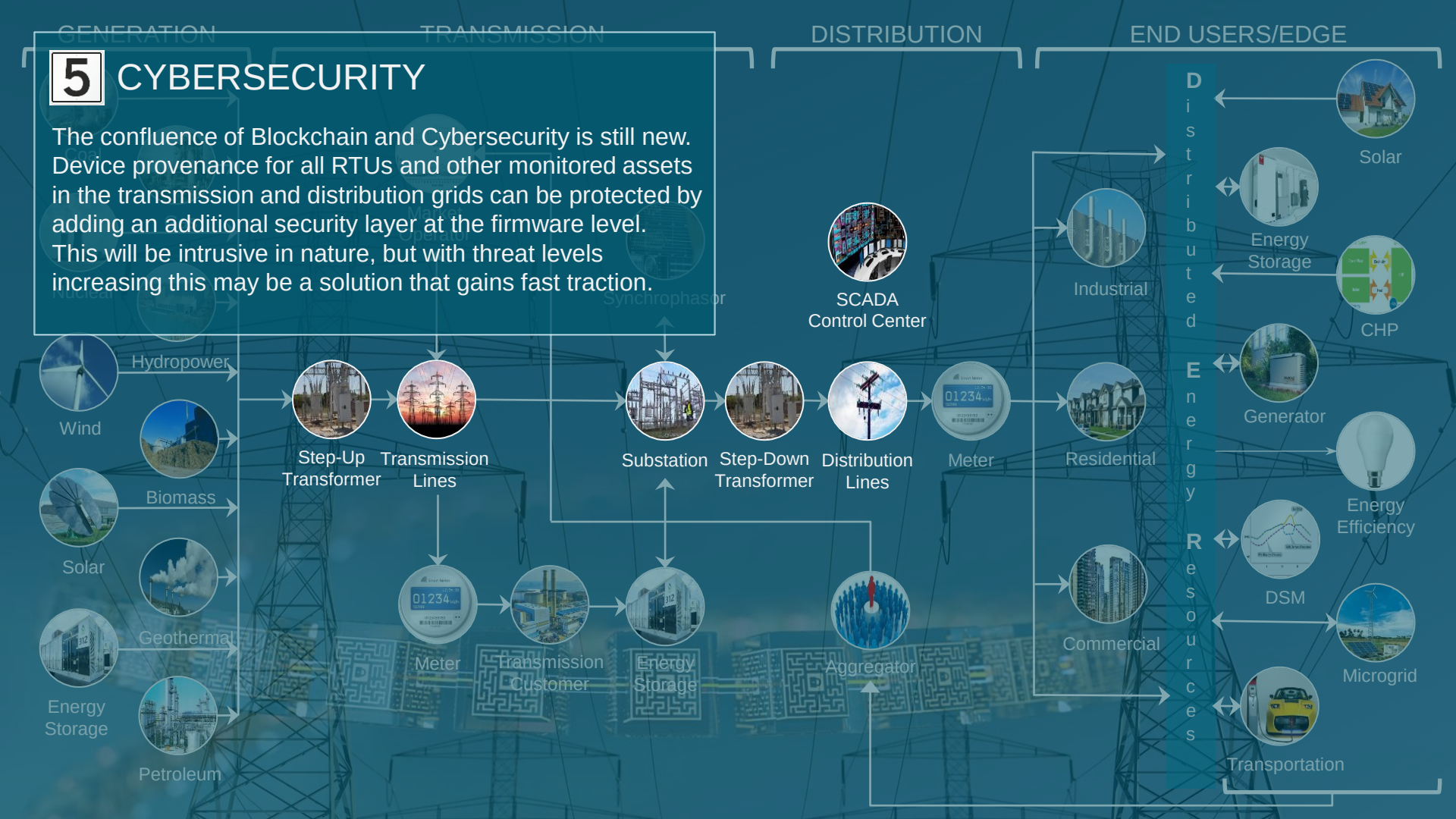
4 PEER-TO-PEER TRADING
Peer-to-Peer (P2P) energy trading is a novel paradigm of power system operation, where people can generate their own energy from Renewable Energy Sources (RESs) in dwellings, offices and factories, and share it with each other locally. Although not viable yet fully supported by most regulatory regimes, these types of transactions can enhance grid efficiency, and eventually, grid stability.


GENERATION
TRANSMISSION
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END USERS/EDGE
5 CYBERSECURITY
The confluence of Blockchain and Cybersecurity is still new. Device provenance for all RTUs and other monitored assets in the transmission and distribution grids can be protected by adding an additional security layer at the firmware level. This will be intrusive in nature, but with threat levels increasing this may be a solution that gains fast traction.
Hydropower
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Biomass
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1 GRID BALANCING

The Market Operator accesses behind-the-meter Distributed Energy Resources (DERs) like home batteries or batteries in electric vehicles to balance the transmission grid. Typically this happens by agreement via a smart contract between the User/Provider and the market operator, at various timeframes.

2 ENERGY USE DISAGGREGATION

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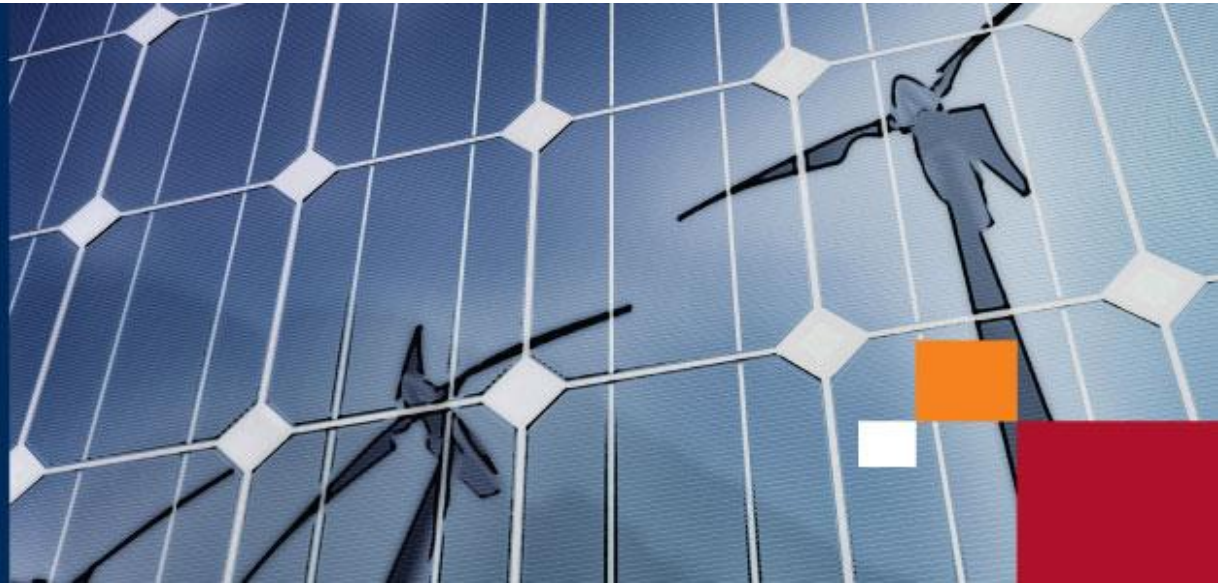


Renewables Around the World

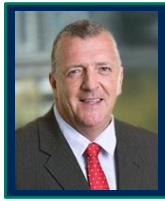
Martin David
Baker McKenzie, Singapore

Naoaki Eguchi
Baker McKenzie, Tokyo

Tim Heitling
Baker McKenzie, Berlin

Tiffany Huang
Baker McKenzie, Taipei

J. Roberto Martins
Trench Rossi Watanabe, São Paulo



Kieran Whyte
Baker McKenzie, Johannesburg

Paul Curnow
Baker McKenzie, Sydney
Moderator

Update on Renewables in the US

Marisa Martin
Baker McKenzie, Chicago

Patricia McDonald
Baker McKenzie, Chicago

Kevin O'Brien
Baker McKenzie, Washington DC

James P. O'Brien
Baker McKenzie, Chicago
Moderator

Baker McKenzie.

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