



Microsoft

# Power & Utilities

Data & AI

Luis Morencos – Director Industry Solution  
WE Energy





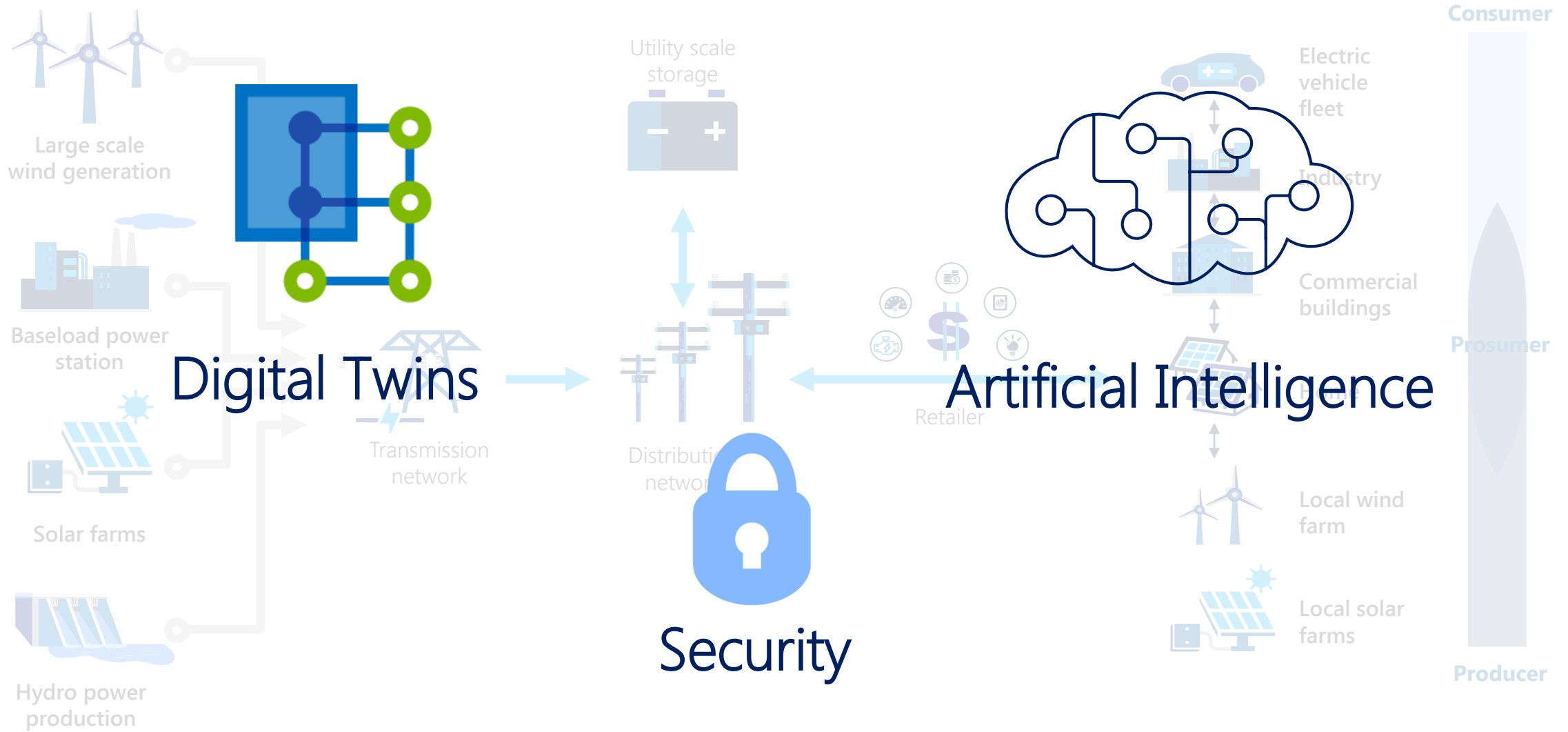
**EMPOWER  
EVERY PERSON AND  
EVERY ORGANIZATION  
ON THE PLANET  
TO ACHIEVE MORE**

SATYA NADELLA  
[ CEO, MICROSOFT ]





# Microsoft in Power & Utilities



# A New Class of Digital Twin



R&D & ENGINEERING

MANUFACTURING OPERATIONS, SERVICES

NEW SERVICES DRIVEN BUSINESS MODELS

## Information mirroring\* model

- Powerful modeling and analysis
- R&D and engineering focus

## Simulation and 3D printing

- Digital design, virtual assembly, and simulation
- 3D printing mainstream

## Connected IoT services

- Unified physical and virtual data
- Rapid feedback across design, manufacturing, and operations

## End-to-end innovation

- Humans and device collaboration
- Spatial awareness and intelligence
- Mixed Reality experience

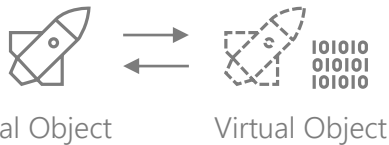
1985-2002  
(18 years)

2003-2014  
(12 years)

2015-2017  
(3 years)

2018 - ...  
(the future is now)

Digital Twin evolution

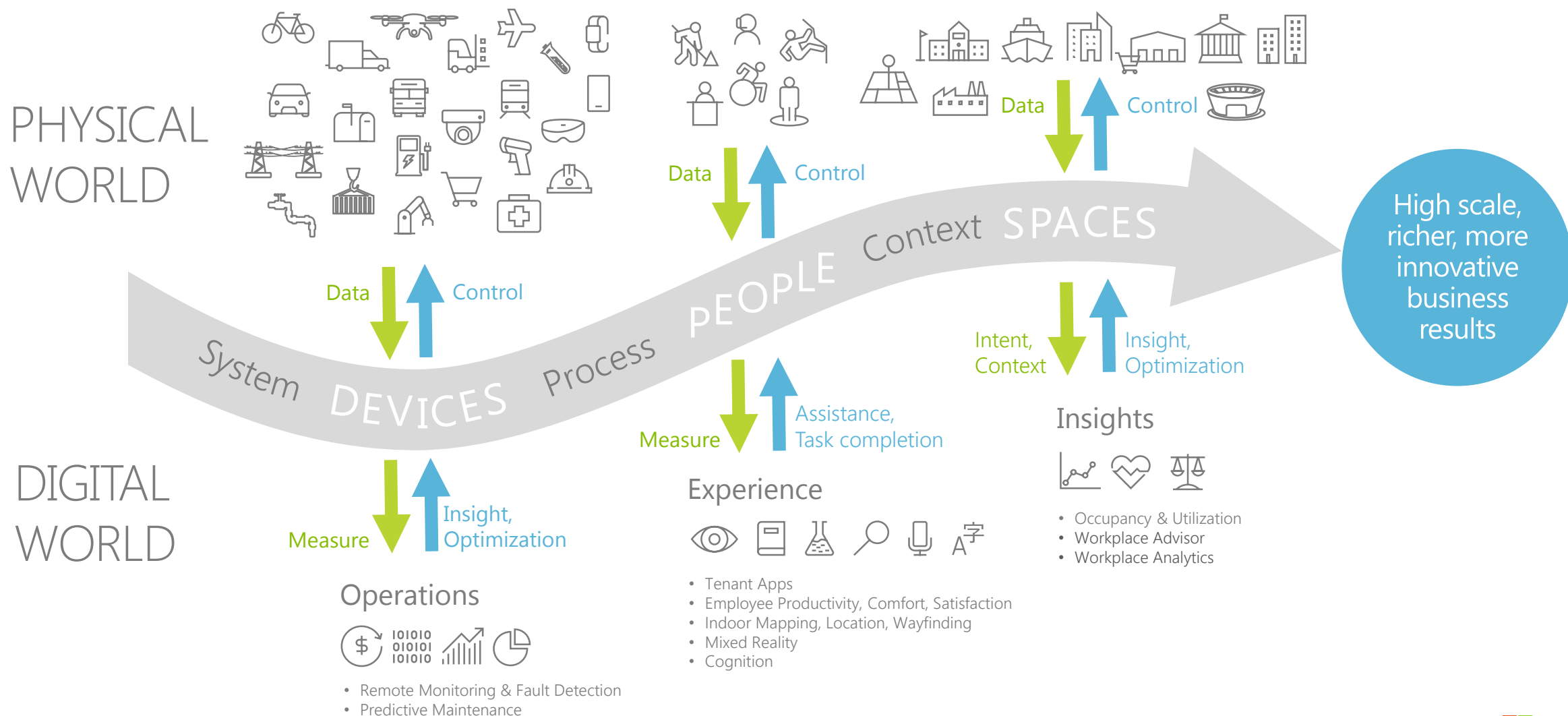


Remote Monitoring  
Predictive Maintenance

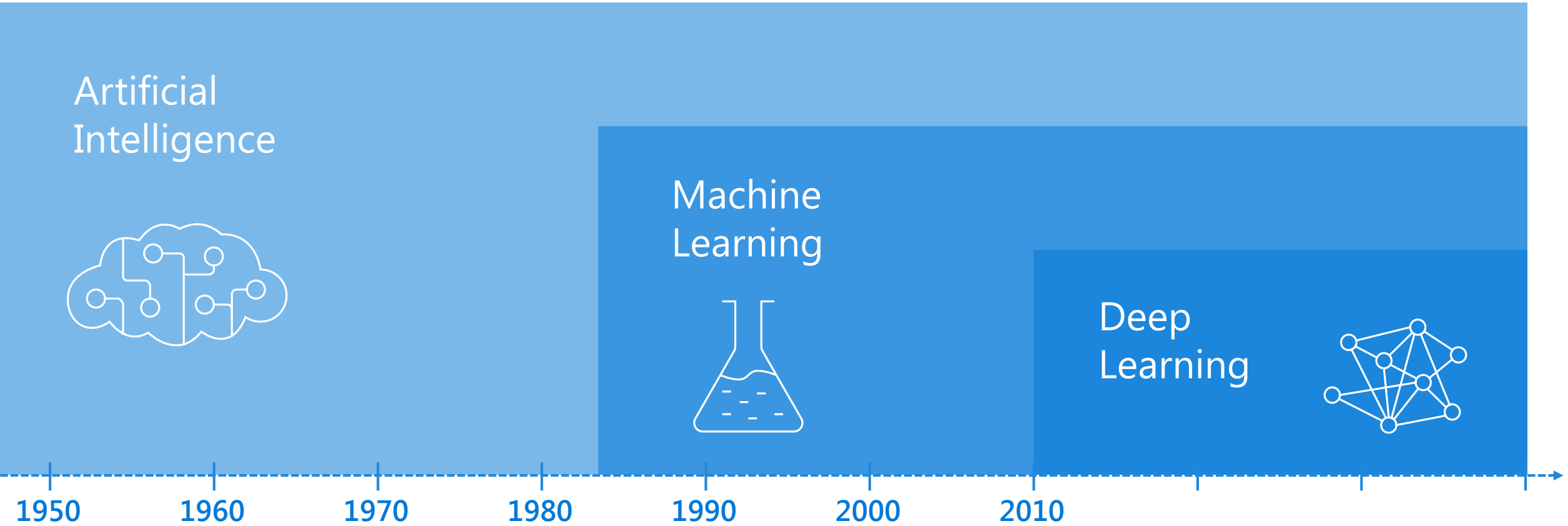


Enable any organization to create digital feedback loops for all aspects of their business

# Digital Twins: Fusing Physical and Digital



# AI, Machine Learning and Deep Learning



# Deep Learning Advancements



**96%**

RESNET vision test  
152 layers

**5.1%**

Switchboard speech  
recognition test

**88.493%**

SQuAD reading  
comprehension test

**69.9%**

MT  
research system





# Microsoft Cognitive Services



**Vision**



**Speech**



**Language**



**Knowledge**



**Search**



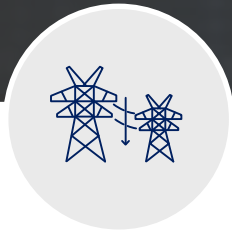
**Labs**



# Artificial Intelligence in Power & Utilities



Secure Grid



Autonomous  
inspection



Predictive  
maintenance



Load  
forecasting



Crew scheduling  
& optimization



Behind the  
meter modeling



Distributed  
flexibility  
exchange



Smart meter  
data analytics



Distributed  
energy resource  
management



Customer service  
management



Customer  
acquisition

# Empowering Flexibility Services and a New Energy Marketplace





**Empowered**

by

Microsoft & Partners



agder energi

## Innovative Star of Energy Efficiency Award: Power Generation and Supply

Source: <https://www.youtube.com/watch?v=cxKphN8iVHE>



**ALLIANCE  
TO SAVE ENERGY**  
using less, doing more.

Source: <http://ase.org/news/alliance-announces-2018-stars-energy-efficiency-award-winners>

# Thank you

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 @LuisMorencos

 Luis Morencos