



**A2EP – 2xEP Energy Productivity Summit**  
**04-05 April, 2017**  
**Australian National Maritime Museum**  
**Darling Harbour, Sydney**

**Session 13**  
**Integrated clean energy (ICE)**

Dan Sturrock

*James Lewis > presentation follows*

Nick Smith

Martin Symes

Tim Stock

Matt Grover

*Chair: Travis Hughes*



*Doing more. Using less.*



renewable choice  
ENERGY

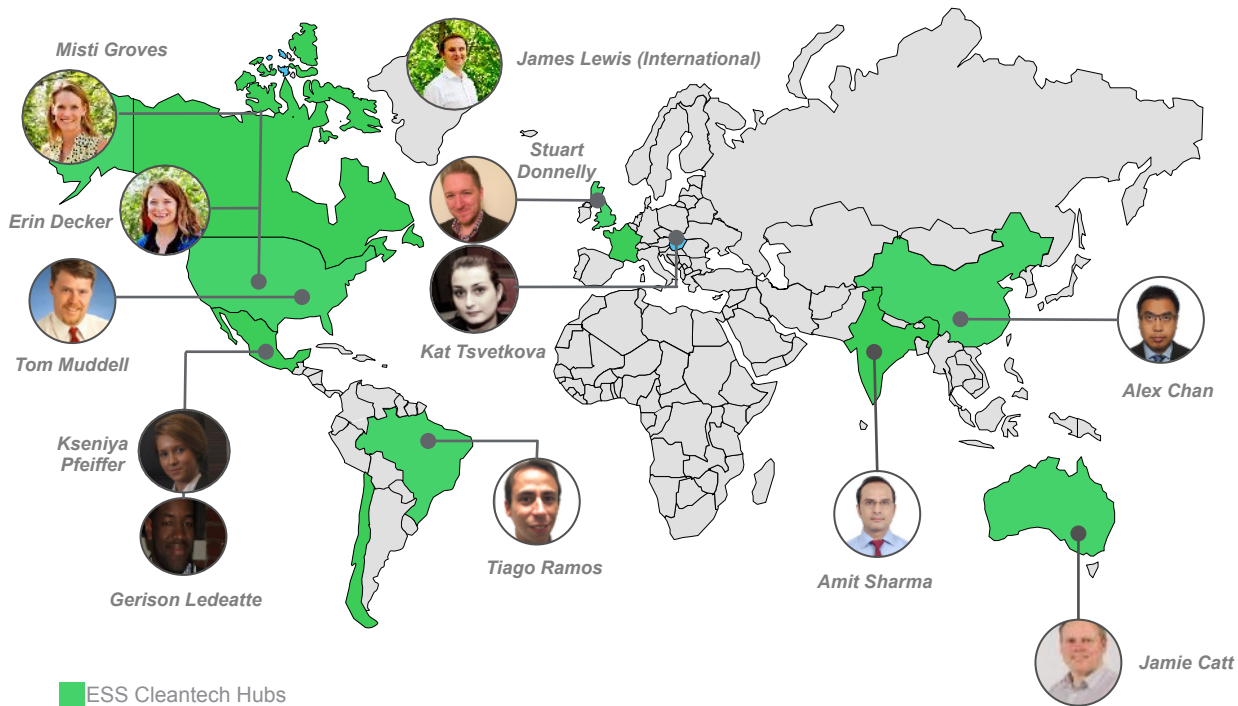
# INTERNATIONAL MARKETS: TRENDS AND LESSONS

is now **Schneider**  
Electric™



# SCHNEIDER ELECTRIC-RENEWABLE CHOICE CLEANTECH OPERATIONS

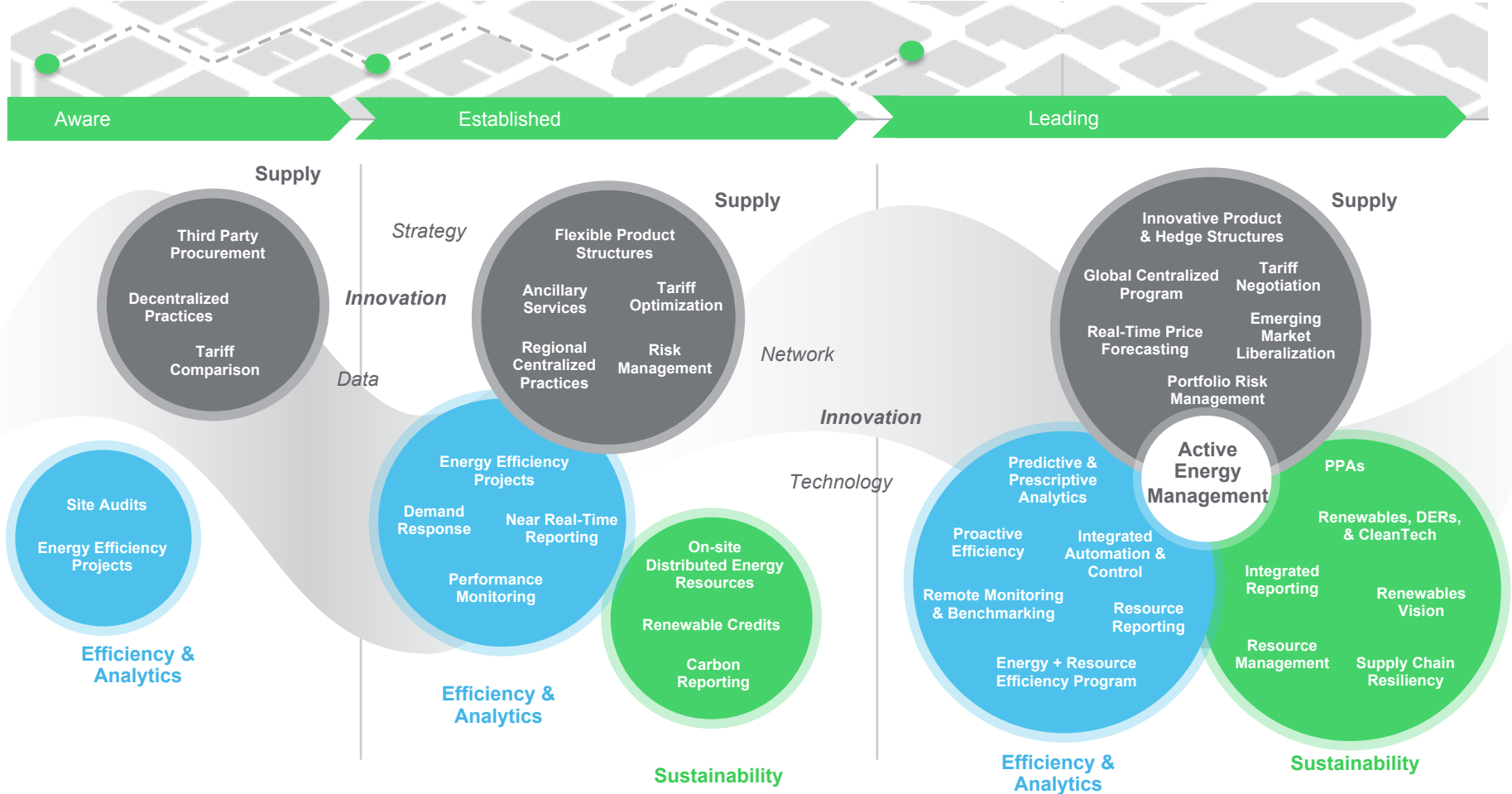
## Regional Team Leaders for Client Services and Delivery



## Global Presence

- Energy Services & Sustainability group headquartered out of Louisville, KY
- Harmonized service offerings across the globe
- Active in 100+ countries with more than 1,500 employees globally
- Regional leads in NA, EMEA, & APAC

# Journey to Active Energy Management





# FOCUS ON CORPORATE RENEWABLES: LEADERSHIP POSITION

Johnson & Johnson

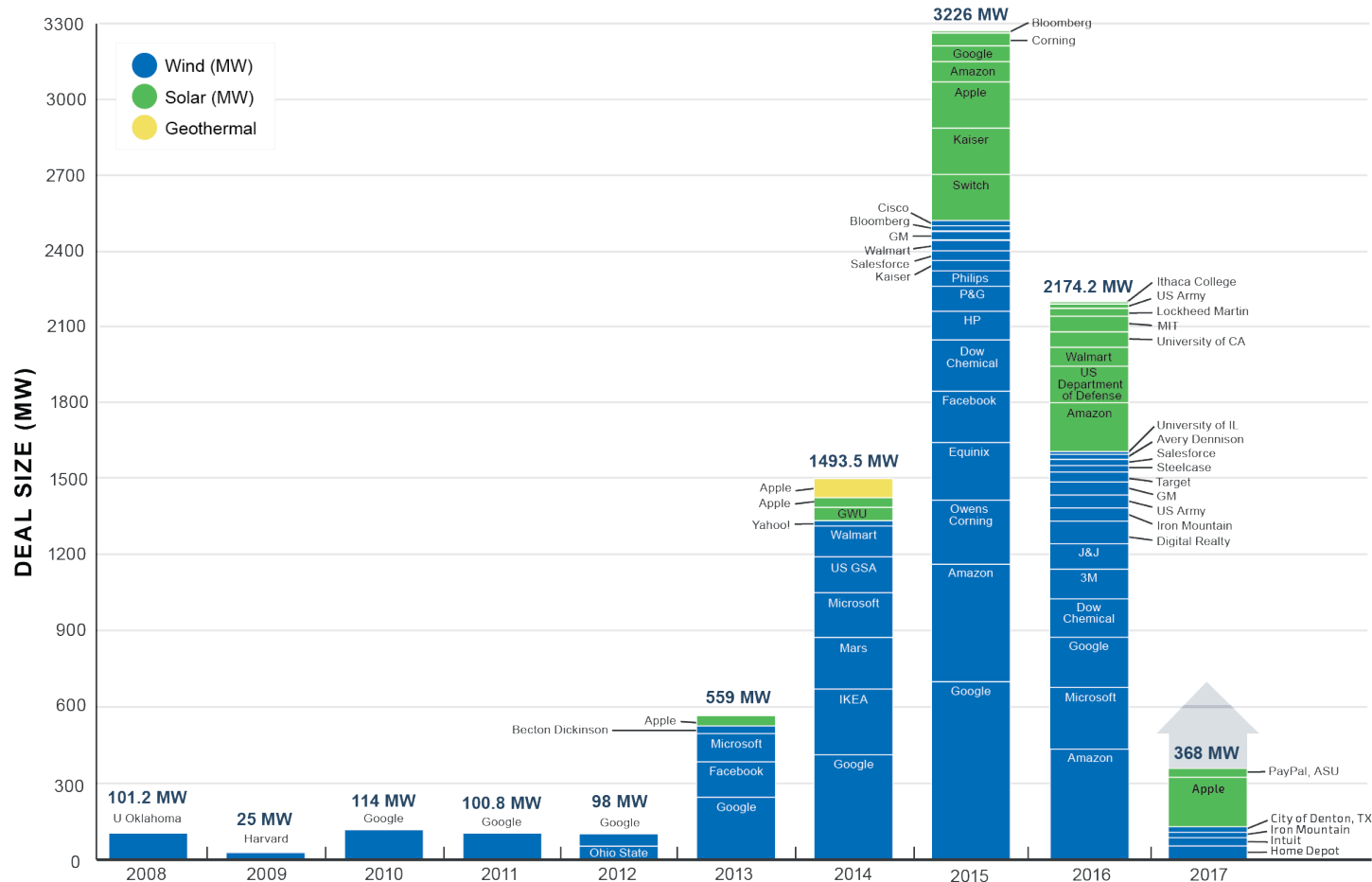


Kimberly-Clark

*Over 3,000 MW of PPAs signed by RCE / Schneider clients globally.*



# AGGREGATE OFFSITE RENEWABLE DEALS IN THE C&I SECTOR BY ENERGY TYPE\*

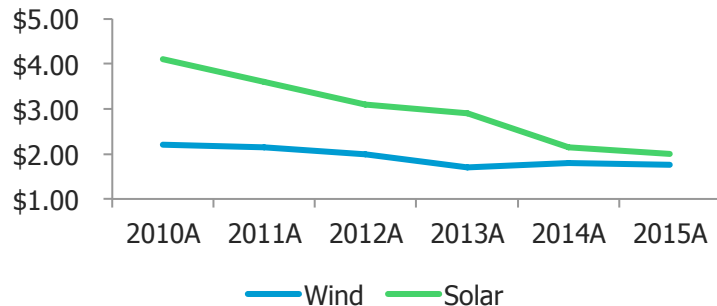


\*Based on publicly announced C&I offsite renewable energy deals (financial, virtual, green tariff, tax equity, etc.) in the United States. Excludes onsite PPAs.  
Last updated 04.14.17.

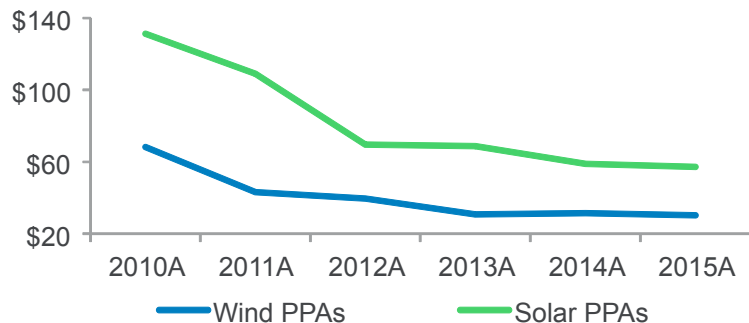


# FALLING TECHNOLOGY COSTS DRIVING GROWTH

## U.S. Average System Cost (\$/W)

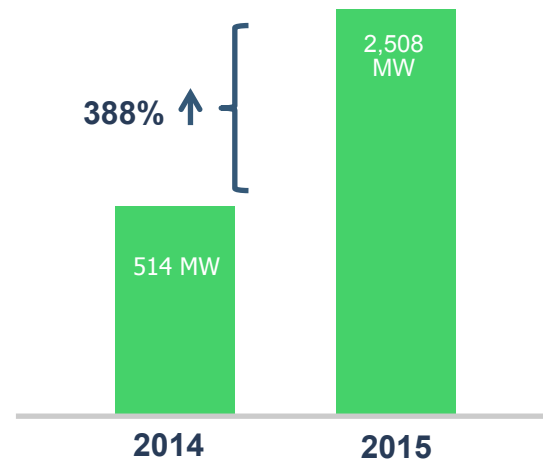


## Historical Cost of U.S. PPAs (\$/MWh)



In 2015, for the first time in the history of the wind market, US corporate demand outpaced utility demand. Corporate wind PPAs represented 19% of total PPAs in 2014 and 56% of total PPAs in 2015.

## Corporate Contracted Wind Capacity (MW):



Source: Enerdata, REN21, IHS, EIA, BNEF, LBL



# WHY ORGANIZATIONS SOURCE RENEWABLE ENERGY

## Environmental

- Reduce environmental impact & climate risk
- Reputation and brand leadership
- Stakeholder & NGO expectations
- Claims & reporting

## Economic

- Achieve environmental goals while making/saving money
- Take advantage of tax incentives and other subsidies

## Fixed Power Price

- Hedge existing short position
- Secure fixed price at a discount rather than a premium
- Mitigate risk of future electricity cost increases

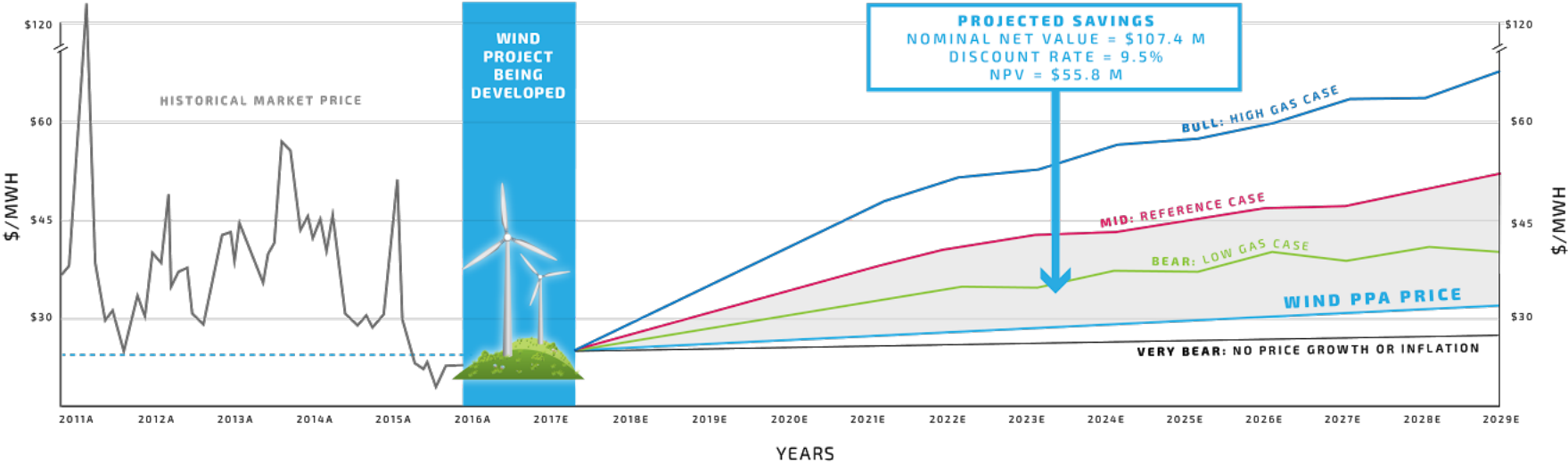






# RECOGNIZING THE VALUE OF OFFSITE PPAS

CASE STUDY: NET PRESENT VALUE (NPV) OF A U.S. PPA





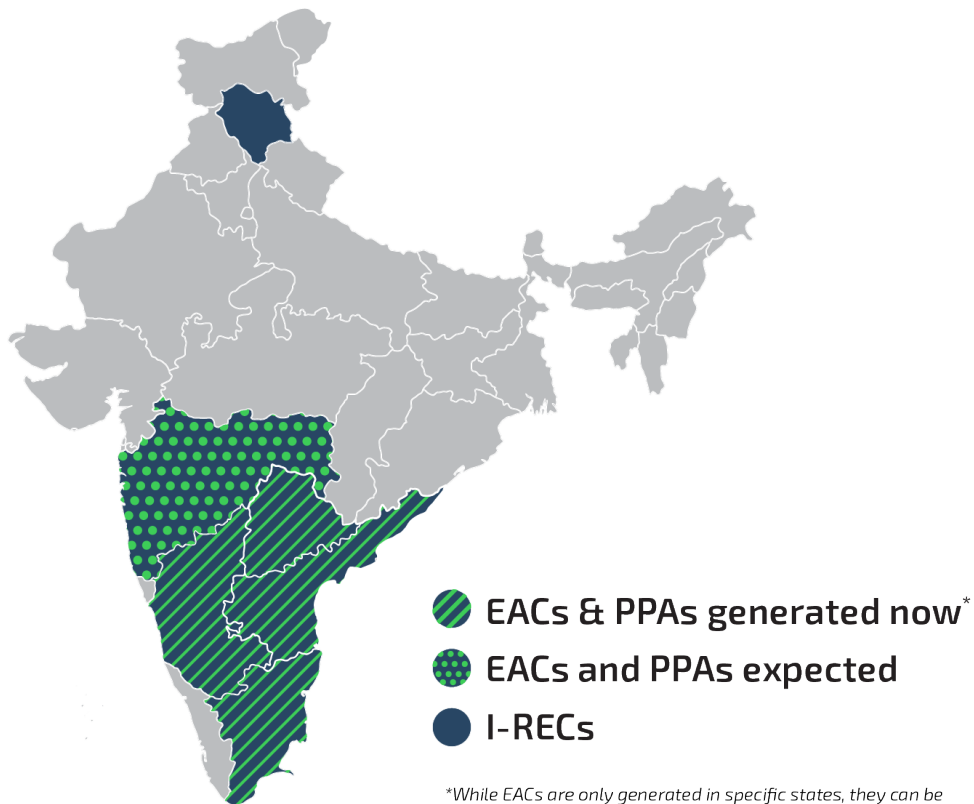
# TRENDS AND LESSONS: USA

- Appetite
  - Corporate PPA appetite remains strong
  - Across increasingly diverse industry sector
  - Gather the right advisers (83% of buyers use or plan to use an adviser)
- Risk management
  - Corporate off-taker has unique needs
  - Lower tolerance for downside risk
  - Price collars and market-following pricing
- Aggregation
  - Developers increasingly offering smaller deals (20GWh p/a)
- Timing
  - Federal subsidies still driving economics (PTC/ITC)





# DIRECT OFFSITE PPAS: INDIA



\*While EACs are only generated in specific states, they can be used nationwide to make emissions reduction claims.

Goals: 175GW by 2022  
(4GW in 2016)

Retail (Direct) PPAs

Key Locations

- Bangalore (Karnataka)
- Chennai (Tamil Nadu)
- Hyderabad (Telangana)

Note: Onsite solar opportunities attractive in many regions



# TRENDS AND LESSONS: INDIA

- Timing:
  - Act to access exemptions (e.g. cross-subsidy)
  - Land availability pressures increasing
- Flexibility on volume and terms
  - Deals from 1MW opening up the mid-market
  - Developers recognize corporate uncertainty about future activity in India
- Supply chain engagement
  - Aggregation opportunities enable collaboration



# SELF SUPPLY: MEXICO

Market liberalizing

Retail (Direct) PPAs

Nationwide opportunity

Self supply for grandfathered projects





# TRENDS AND LESSONS: MEXICO

- Politics:
  - Prices depressed in recent years – political manipulation and low commodity costs
- Flexibility on volume and terms
  - Developers recognize corporate uncertainty about future activity in Mexico
- Compliance
  - Lack of awareness of future RE compliance obligations: 5% from 2017, increasing over time



## FINAL NOTE

- Global market is dynamic and exciting (Poland, Argentina, Brazil, China...)
- Complex and differentiated
- Arm yourself with the right advice: internally and/or from external sources to capitalize (and avoid risks and unforeseen obligations)
- Join the party: 161 GW of renewables onto the global grid last year (IRENA)





THANK YOU



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