

The Three Revolutions

Nepal Power Investment Summit

Vandana Gombur

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**Bloomberg
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The Three Revolutions

- Clean Energy
- Storage
- Mobility



Solar



Wind



Power and
Utilities



Gas



Carbon
Markets &
Climate



Energy
Smart
Technologies



Storage



Electric
Vehicles



Mobility and
Autonomous
Driving



Frontier
Power

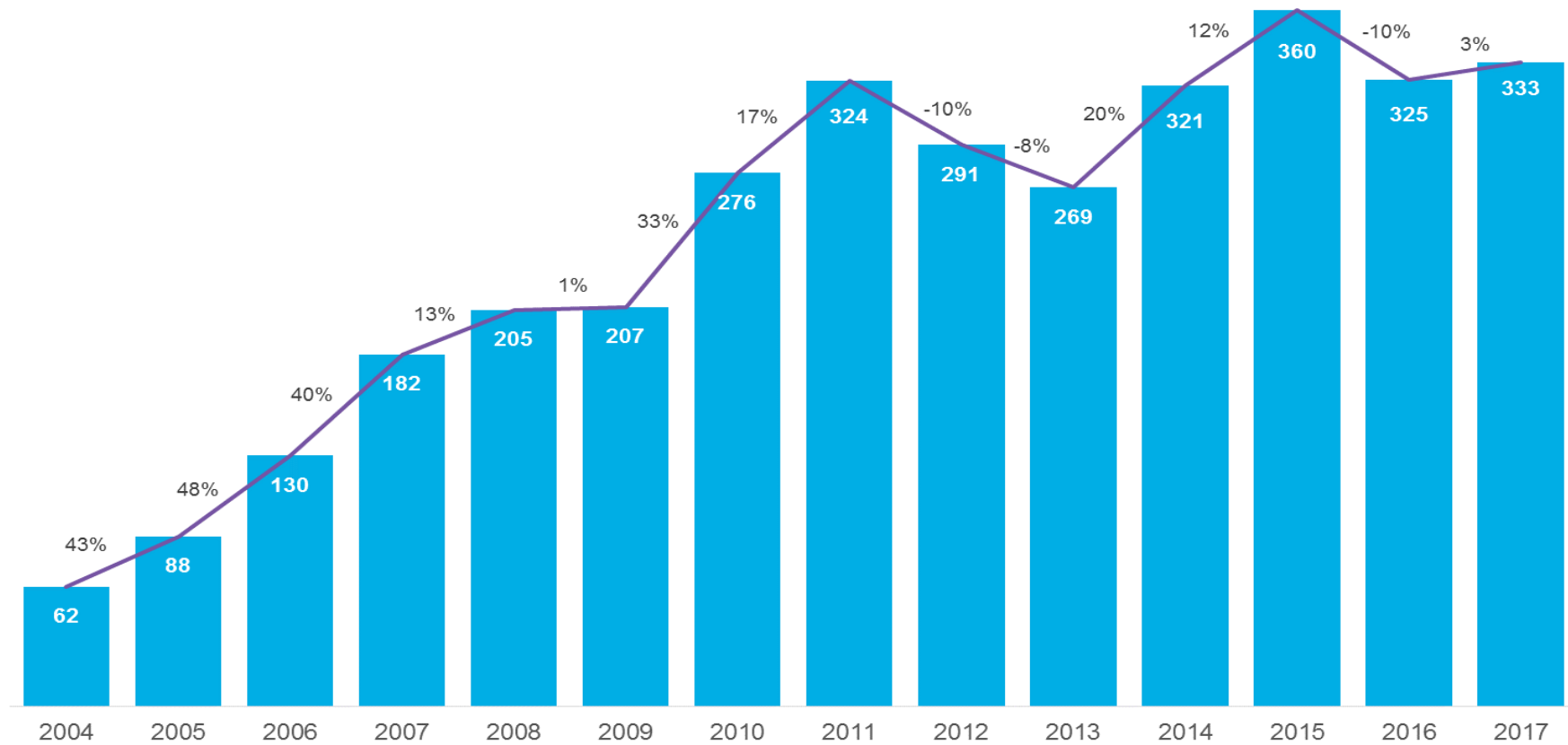


Emerging
Technologies

Global New Investment in Clean Energy

2004 – 2017

\$bn



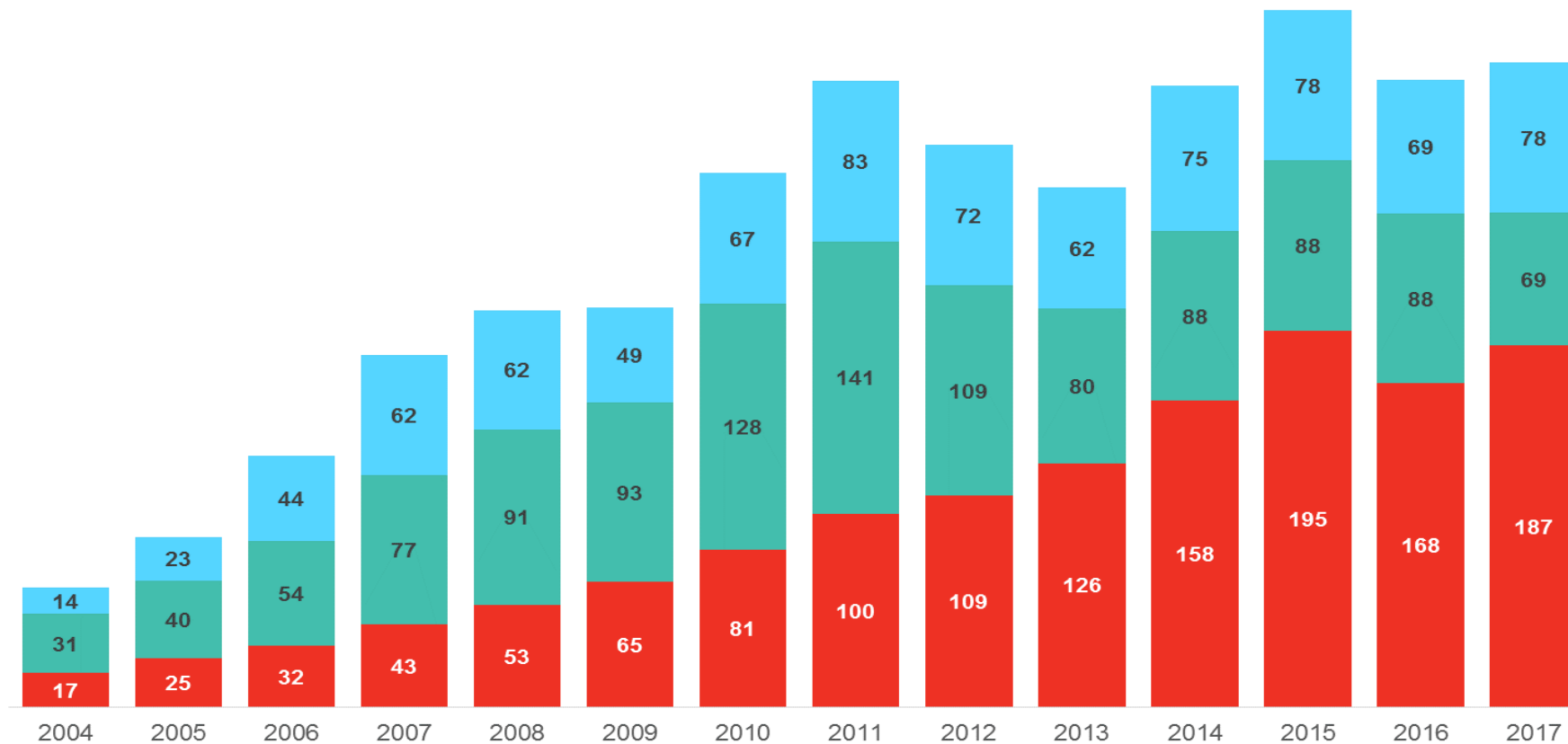
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Source:
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Global New Investment in Clean Energy by Region

2004 – 2017

\$bn



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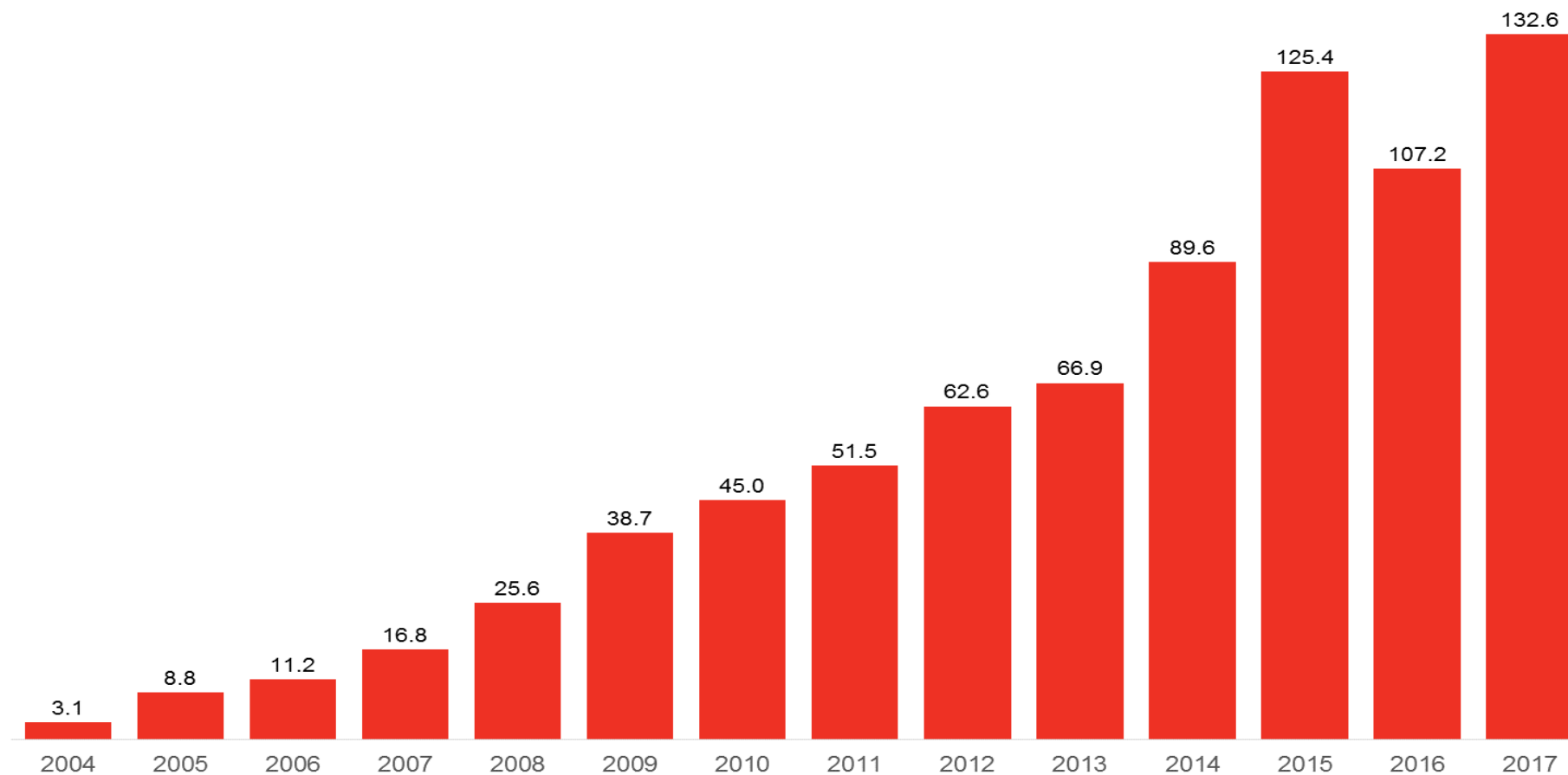
■ APAC ■ EMEA ■ AMER

Source:
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New Investment in Clean Energy China

2004 – 2017

\$bn



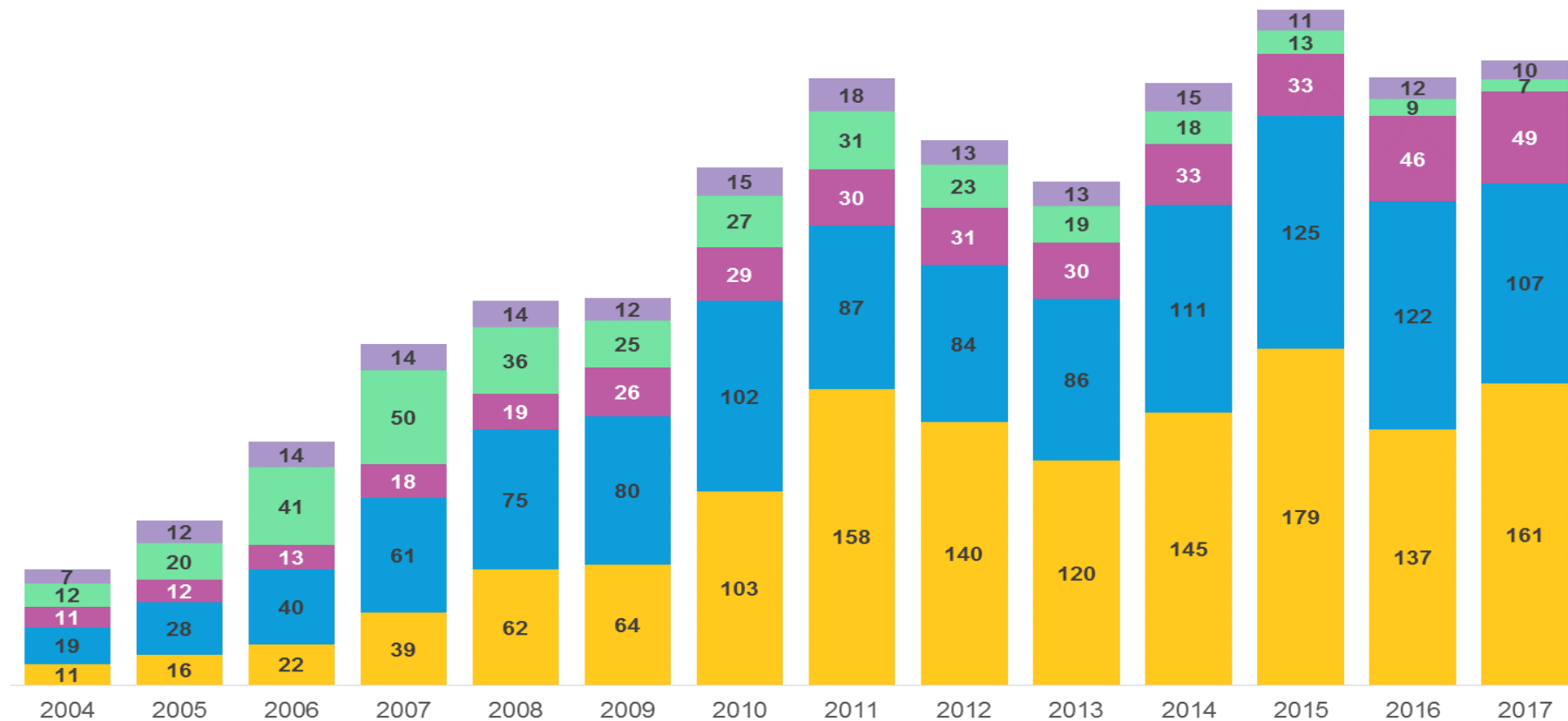
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Global New Investment in Clean Energy by Sector

2004 – 2017

\$bn



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■ Solar
 ■ Wind
 ■ Energy smart technologies
 ■ Bioenergy
 ■ Other

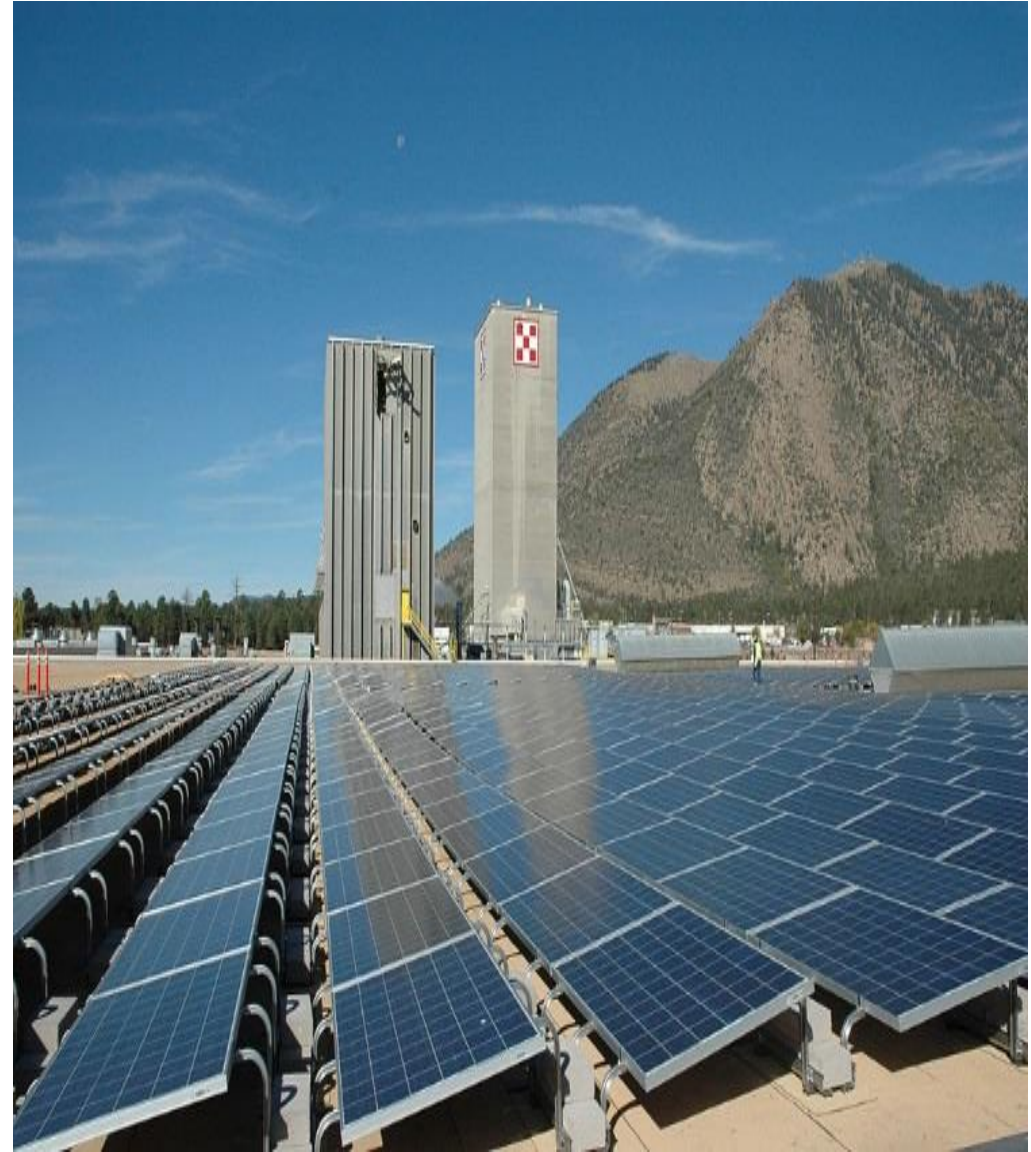
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Competitive power

< 3
U.S. cents

Projections for 2018

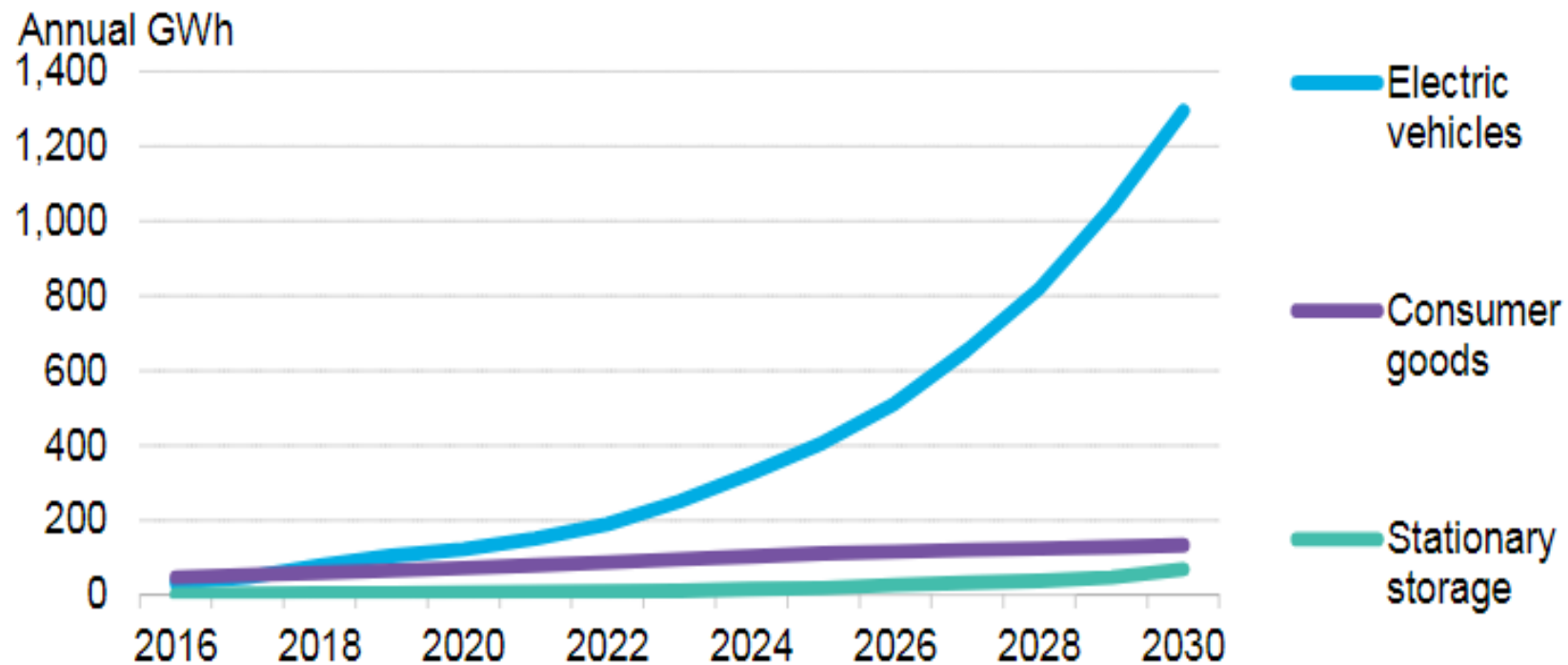
- 107GW+
new solar
- ~59GW
new wind farms



Source: Wikimedia Commons

Storage

Figure 54: Global lithium-ion demand by market segment



Source: Bloomberg New Energy Finance. Note: Assumes 100% of stationary is lithium-ion.

Automotive demand set to surge



South Korea will be the single largest market in 2018, for the second consecutive year. ”

10-15%
price dip

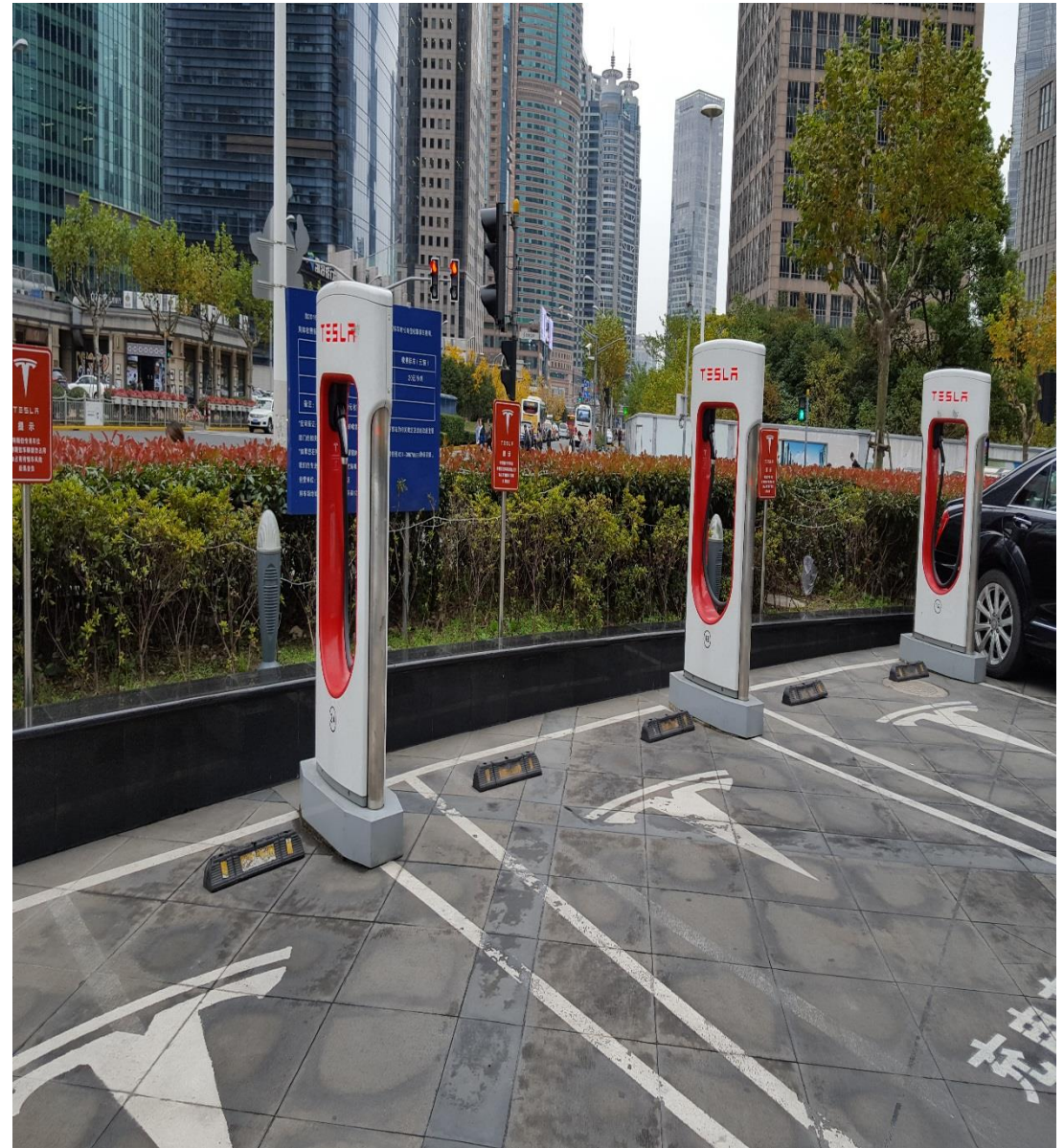
Electric Vehicles

- China is the largest market
- Cities are phasing out ICE vehicles



Electric Vehicles

- 1.1 million
- 1.5 million



Changing dynamics

Energy Absolute to Build 1GWh Energy Storage Plant in 1Q 2018

By Bloomberg News / 27 Nov 2017

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Energy Absolute Pcl, which has morphed in recent years from a producer of biodiesel to Thailand's leading renewable energy company, plans to build a 1 gigawatt energy storage plant in the first quarter of 2018

Energy Absolute Plans 1,000 Charging Stations for Electric Cars

By Anuchit Nguyen

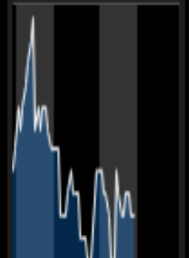
(Bloomberg) -- Co. to build 1,000 charging outlets nationwide by end of 2018, it says in e-mailed statement.

- Currently operates 100 stations in Bangkok and nearby provinces
- Expansion of charging outlets to help support “substantial growth” of electric vehicles in Thailand, CEO Somphote Ahunai says
- NOTE: Dec. 21, Energy Absolute to Invest 25B Baht in Wind Power, Storage
- NOTE: Shares +140% in past year vs +17% for SET index

EA TB Equity

Graphic Dashboard

Price 2D
THB 68.00



Changing dynamics

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Saudi Arabia Plans Up to \$7 Billion of Renewables This Year (1)

By Bloomberg News / 16 Jan 2018

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Saudi Arabia expects to start up to \$7 billion of renewable energy projects this year, with solar plants leading the way.

Race for Lithium Sees Quarter Billion Investment From Toyota (1)

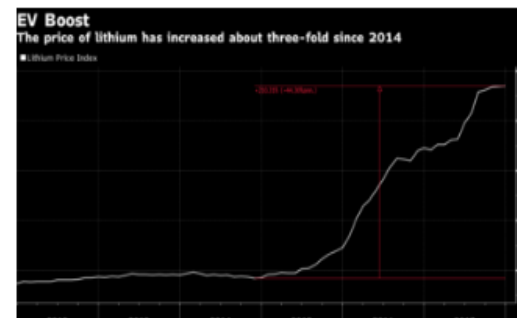
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Toyota Group's trading unit will take a stake in an Australian lithium miner, the latest move by an Asian automaker to secure battery metals as the industry accelerates its development of electric vehicles.



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Shell Bolsters Renewables Bet With Stake in U.S. Solar Company

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Royal Dutch Shell Plc is investing in a U.S. solar energy developer, continuing its recent expansion into the electricity business.

Interest may be worth up to \$217 million, based on performance

Shell, Engie VC Funds Invest in Indian Mini-Grid Developer

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Husk Power Systems Pvt Ltd. received \$20 million from Shell Technology Ventures LLC, Engie Rassembleurs d'Energies and Swedfund International AB.

The Patna, India-based company builds and installs miniature power grids in its home market and Tanzania. It generates

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India's power ministry is considering a lock on electricity sales by distribution companies to speed up growth in vehicle charging stations, according to a ministry official familiar with the plan.

Amending Electricity Act an option for ministry

Rules now allow only distribution companies to

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Ford Goes 'All In' on Electric Cars With \$11 Billion Investment

By Bloomberg News / 15 Jan 2018

Ford Motor Co. will more than double spending on electrified vehicles, amplifying its investment in a segment that still comprises a fraction of the auto market.

Automaker swapped CEOs last year after falling behind Tesla

Mach 1 SUV among 16 battery-electric vehicles planned by 2022

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Ford Motor

Organization

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