



REC's SOLAR MARKET INSIGHT

Q2 2016



REC

ENERGIZING LIFE TOGETHER

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2.2 MW, Singapore

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REC Highlights Q2 2016



Major REC Q2 2016 Highlights



- In 2016, REC celebrates its **20th anniversary** – having grown from a pioneer to a world leader in solar
- A strong **increase in shipments in Q2 2016**, growing by **+25%** year-on-year
- Continued **strong growth** in the U.S. market, which accounted for **60% of REC's** shipments in Q2 2016 and grew by **57% year on year**
- The successful **roll out of REC's Solar Professional Program** for solar installers in **Asia Pacific region**
- **Demonstrated commitment to satisfying customer requirements** by accelerating the conversion from **REC Peak Energy** to **REC TwinPeak** and introducing a **mono product in 2017**
- **New record efficiency of 20.46%** achieved for multicrystalline solar cell manufactured at REC – and above 20% in mass production from November 2016
- As the **first module manufacturer** in the industry to obtain the new **ISO9001:2015 certification** (with zero non-conformance), REC reinforced its position as one the **leaders in quality control and assurance**



Stephan Herkert joins REC as Chief Commercial Officer



- REC is pleased to announce the on-boarding of Stephan Herkert as Chief Commercial Officer (CCO), being responsible for Global Sales and Marketing
- As CCO, Mr. Herkert will significantly drive the future growth, direction, and success of REC by focusing on superior product quality and delivering unmatched customer satisfaction
- Mr. Herkert brings with him more than 25 years of experience in international sales, business development and management, as well as vast experience in business and commercial development, building and growing new markets in the EMEA region, Americas & Asia
- Prior to joining REC, he held various management positions in Europe, Asia and US related to the solar industry



In 2016, REC celebrates its 20th anniversary – having grown from a pioneer to a world leader in solar



- REC celebrates this year its **20th anniversary**
- Founded in **1996 in Norway** – REC can look back at a successful history and impressive company development - from hand-washing its first wafer, to producing **20 million panels in its history at end-2015**
- The core focus of REC is and has been the **sustainable production of clean energy products** – growing from a pioneer in the solar industry, to a world leader
- With 20 years in the business of solar power – REC, thanks to its **great products, services, and people** – has demonstrated **longevity** in an industry where many players have come and gone in a much shorter time



20

million panels
manufactured



5

gigawatts
generated



8

million people
powered at home



Founded in
1996

Headquarters
in **Norway**

REC expands its industry-leading “REC Solar Professional Program” for solar installers in Asia Pacific



- REC has successfully rolled-out its REC Solar Professional Program for solar installers in 4 new key Asia-Pacific countries: Sri Lanka, Vietnam, Thailand and Philippines
- Torgeir Ulset, REC’s Vice President for Sales and Marketing in Asia-Pacific: “REC’s Solar Professional Program is a key differentiator that sets us apart from our competitors.”
- The continued roll out illustrates strong commitment of REC to support its local network partners and to ensure the highest quality product to end-customers
- The REC Solar Professional Program promotes a long-term alliance between REC and its local expert partners
- The program offers several benefits for local partners such as
 - Training programs and exclusive seminars
 - An extended product warranty – from 10 to 12 years
 - Powerful sales and marketing tools





15.53 MW, Kaua'i, USA

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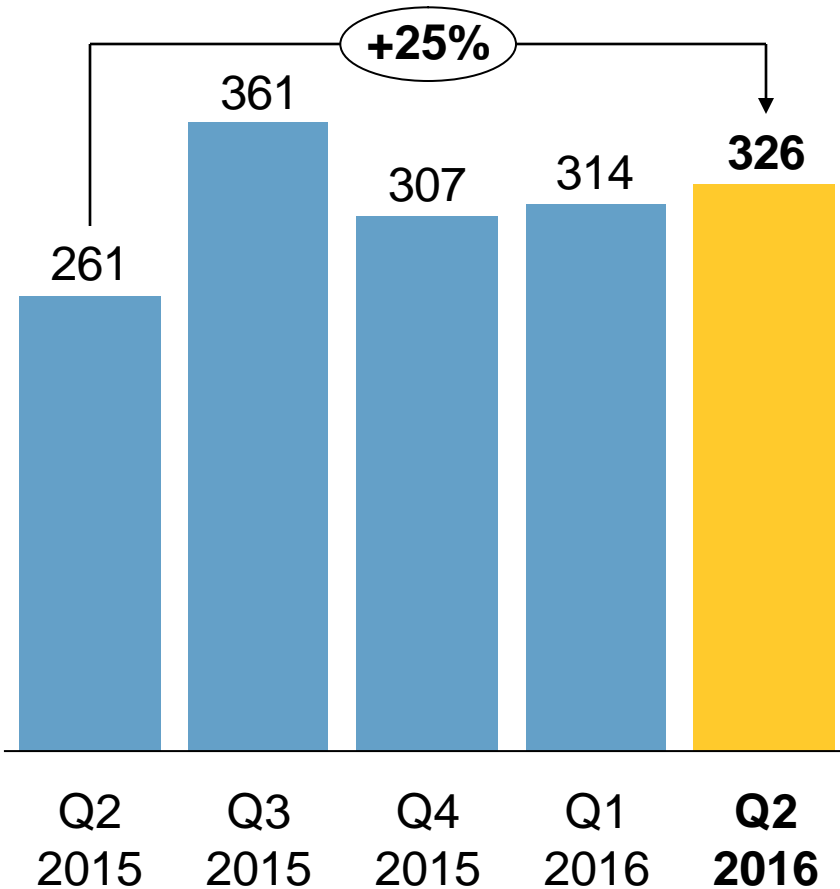
Global Performance - Q2 2016



REC saw a strong rise in Q2 2016 shipments year-on-year as well as quarter-on-quarter



Module Shipments by Quarter
(in MW)

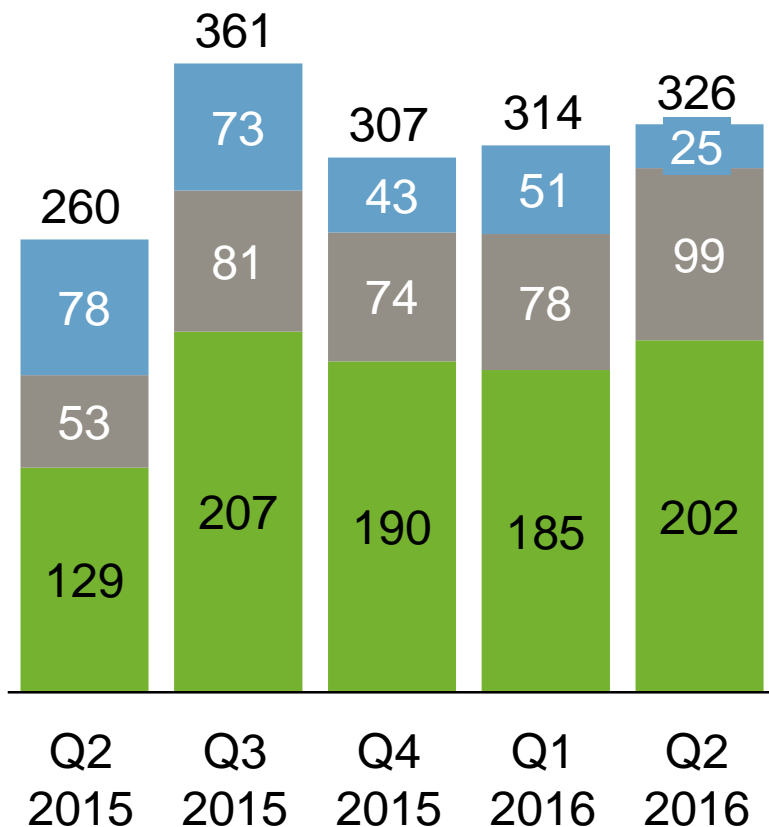


- Q2 2016 module shipments **totaled 326 MW**
- Strong **25% year-over-year increase** in module shipments
- **Quarterly module shipments increased by 4%** compared to Q1 2016

Once again, the majority of REC's shipments in the quarter were to the growing US market



Module Shipments by Region
(in MW)



- The **U.S.** accounted for the majority of REC shipments in **Q2 2016 with over 60%**
 - U.S. shipments **grew year-over-year at 57%** - illustrating REC's strong presence in this market
- Shipments to the EMEA region **grew by 87%** compared to the **same quarter** in the **previous year** – proof of REC's reputation in the region as a high quality supplier
- The APAC region, including Japan, faced declining shipments

* Excluding China



24 MW, Canino, Italy

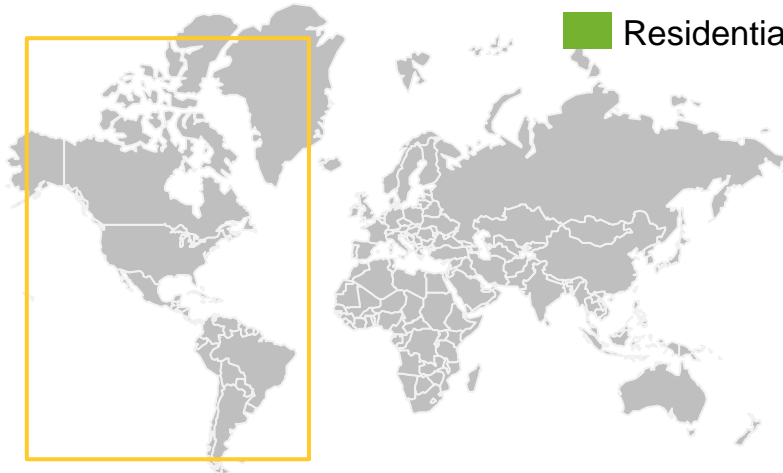
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Regional Performance Q2 2016



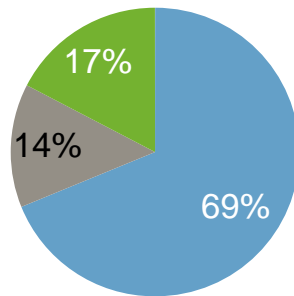
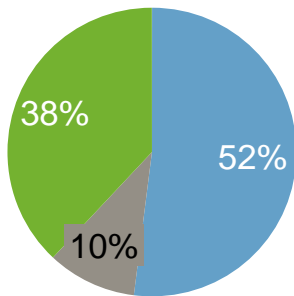
Q2 2016 Module Shipments split by Segment

(in MW)



REC¹ Q2 2016

Total² market 2016



REC Performance Highlights

- The USA – the 2nd-largest market globally – was once again the top market for REC
- Over 60% of Q2 2016 total REC shipments were delivered to the U.S.
- The high quality of REC's products was evidenced by the following accomplishments in the US market:
 - #1 most popular panel brand for residential installations in California
 - #1 most popular panel brand for residential installations in the entire U.S.³
- The debut of the much-anticipated 72-cell variant of award-winning REC TwinPeak solar panel at Intersolar North America

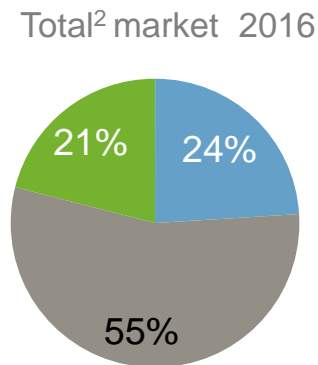
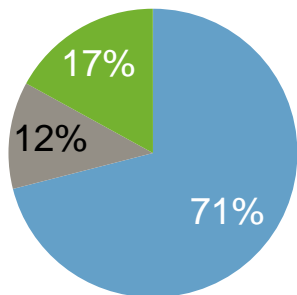
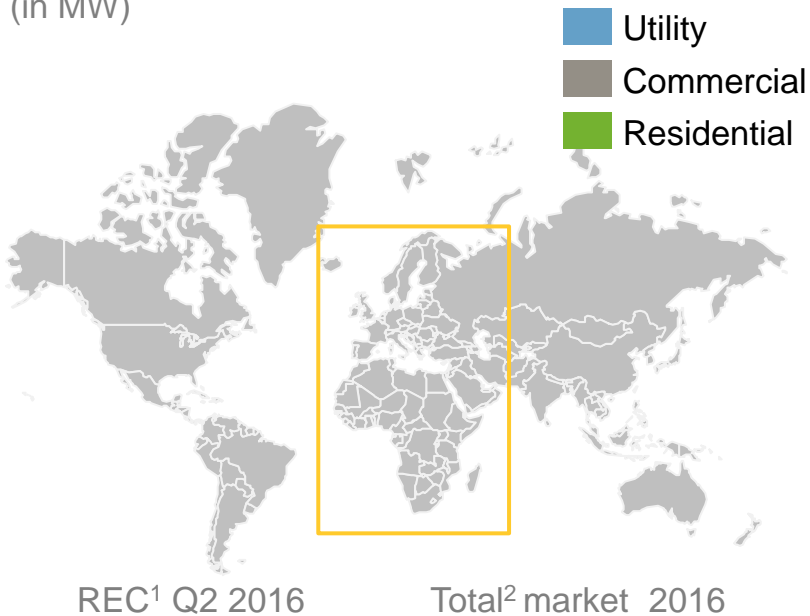
U.S. Market Development Highlights

- Fundamentally stronger-than-ever PV system economics
- General trend of integrating more renewables into the power grid, at the expense of coal and nuclear energy
- Further utility-scale project spillovers into 2017

¹ REC market segment module shipment volume splits are best estimates; ² Total market estimate; ³ Based on Q1 2016, published June 2016

Source: REC; GTM Research June 2016; IHS Markit

Q2 2016 Module Shipments split by Segment (in MW)



REC Performance Highlights

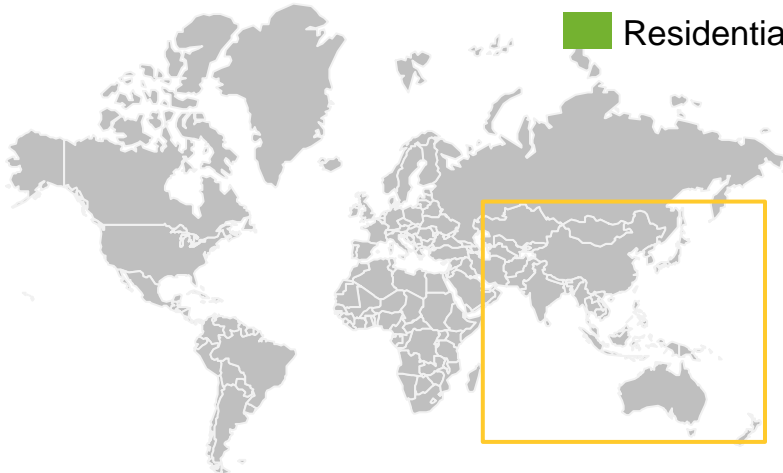
- Shipments to the EMEA region grew by 87% year-over-year
- Strong sales increase in Germany offset a decline in UK sales
- REC's commitment to long lasting relationships with strong reliable partners acts as the base for continued strong performance even in challenging times
- Particularly in the residential and C&I segment, REC continues to perform well due to its excellent customer service and high level of customer trust

EMEA Region Development Highlights

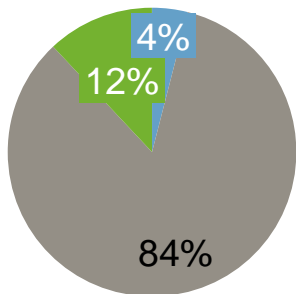
- Germany passed its new renewable energy law – providing long-term policy certainty
- France published its multi-year energy plan, which is really good news for the solar sector – as the new targets will require a tripling of renewables capacity, from 15 GW in 2015 to 55 GW in 2023
- An increasing number of markets announced auctions for solar PV procurement

1 REC market segment module shipment volume splits are best estimates; 2 Total market estimate

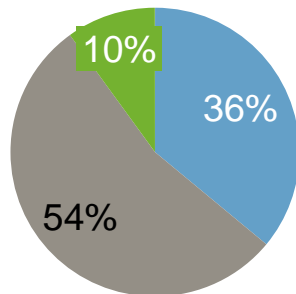
Q2 2016 Module Shipments split by Segment (in MW)



REC¹ Q2 2016



Total² market 2016



REC Performance Highlights

- Slower Q2, but stronger pipeline for Q3 and Q4 – with markets such as India and Thailand showing strong interest in the REC TwinPeak 72 panel
- Ongoing expansion of a strong and reliable REC distribution partner network especially in Australia and India
- REC Japan continues to enjoy steady demand from the C&I segment based on its strong partner network, excellent customer service and brand recognition

APAC Region Development Highlights

- India's solar market gains momentum
- Medium-term outlook looks promising for the region due to improving project economics and market mechanisms
- New regulatory framework for FiT in Japan is setting the scene for the sustainable long-term growth of PV and providing policy certainty

¹ REC market segment module shipment volume splits are best estimates; ² Total market estimate (ex. China)



573 kW, Dubai, UAE

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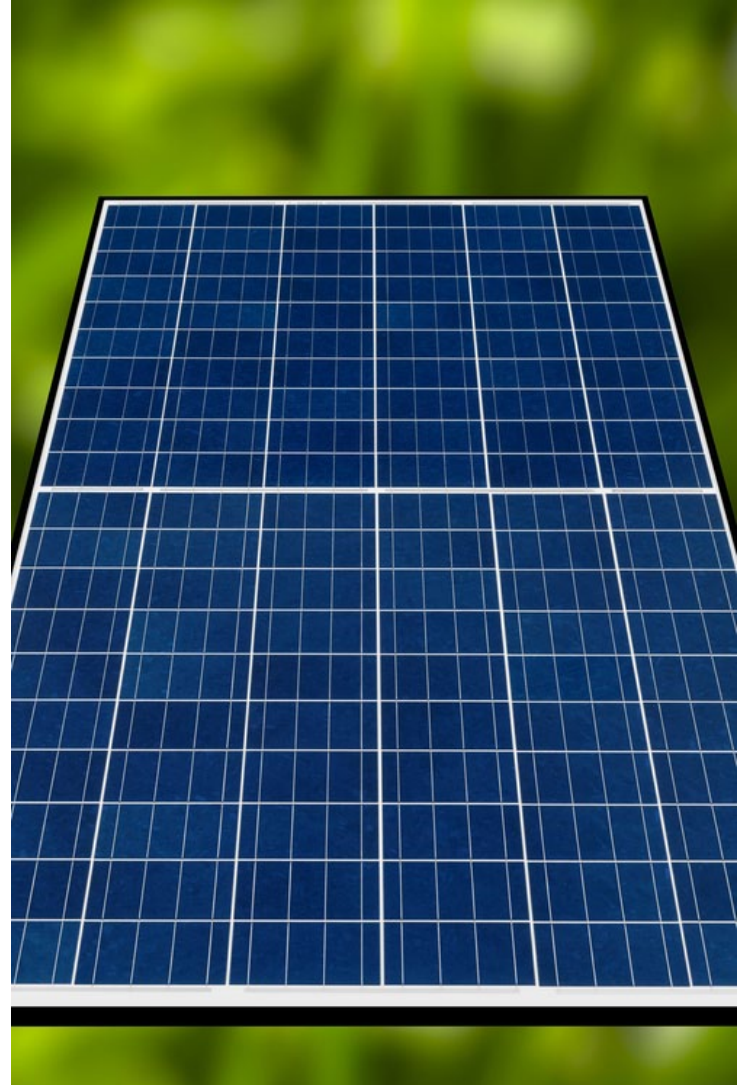
Product and Technology Highlights



Continued ramp up of TwinPeak production and new REC cell efficiency record of 20.46%



- REC is **successfully ramping up** its **REC TwinPeak Series** production with **record production volumes** being reached
- REC continues to **migrate** more of its production to **REC TwinPeak technology** at its integrated manufacturing facility in Singapore
- REC reached **20.46%** **multicrystalline solar cell efficiency** and expects see an average efficiency above 20% in mass production from November 2016
- This achievement illustrates REC's focus on **technology leadership**



Proven commitment to high quality: REC achieves ISO 9001:2015 certification standard



- REC is the **first module manufacturer** in the industry to **achieve compliance with the new ISO 9001:2015** certification, with **zero non-conformance**
- This achievement confirms REC's **commitment to quality and customer satisfaction**
- The ISO 9001:2015 standard sets out the criteria for a quality management system – extra emphasis is put on addressing organizational risks and opportunities, more effective supply chain management and leadership engagement



Successful conversion to new online slurry system for wafer production in Singapore



- REC successfully implemented its transition to a **new online slurry system** for wafer production in Singapore at the end of May 2016
- The in-house slurry system allows for
 - Cost reduction
 - Fast progress on improvement activities
 - Internal control on system reliability, capacity management and process optimization





3.2 MW, Indianapolis, USA

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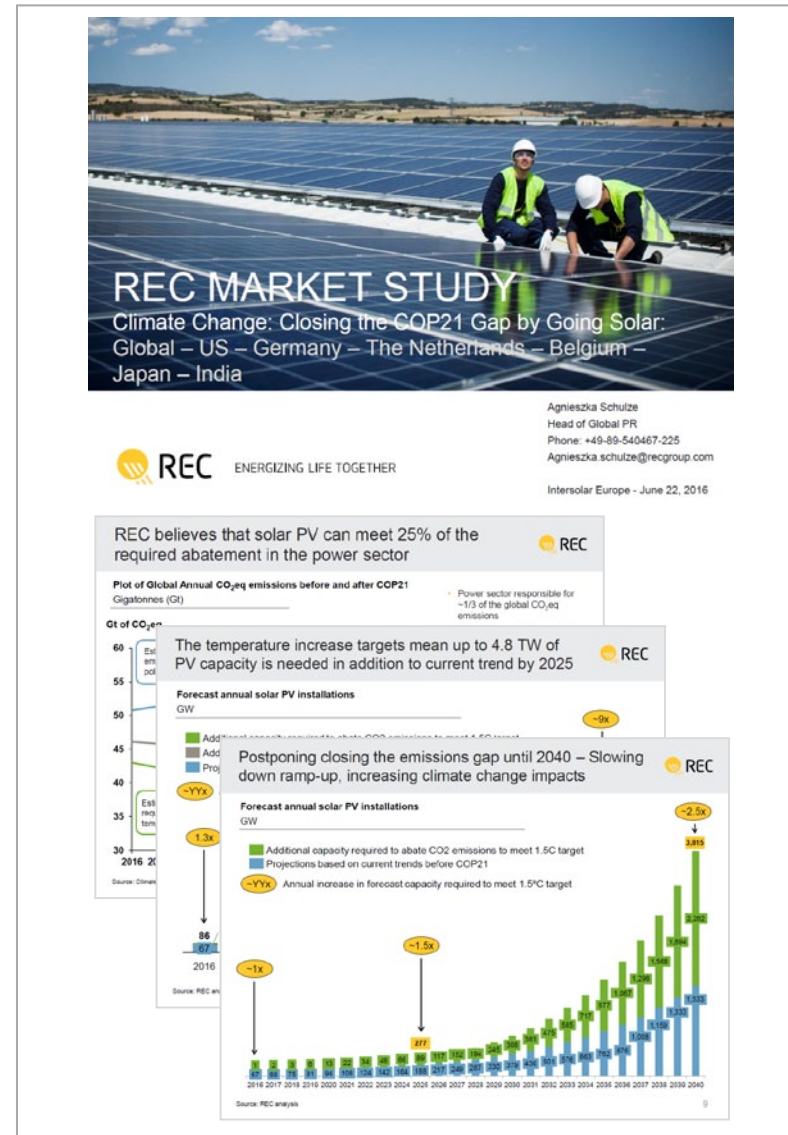
REC Views



REC Market Study – Climate Change: Closing the COP21 Gap by Going Solar



- The fight against climate change saw a new milestone as **U.S. President Barack Obama and Chinese President Xi Jinping** formally joined the **Paris climate agreement**
- As climate protections and sustainability is at the heart of our what we do, we would like to guide you to visit our website for **REC's study "Climate Change: Closing the COP21 Gap by Going Solar"**
- Since there is no analysis on the concrete impact from COP21 for the solar industry available, **REC developed its own model** to calculate the potential solar capacity forecast.
- Since **~1/3 of global energy-related CO₂ emissions are from the power sector**, REC believes that solar can make a significant contribution in reducing emissions and by this limiting temperature increase.
- The study highlights: To be **on track by 2025 to close the emissions gap** and avoid further accelerating climate change impacts, the potential solar capacity ramp-up is far larger than industry analysts today expect, resulting in **up to 4.8 terawatts above the current forecast of cumulative new solar capacity by 2025**.





I'd put my money on the sun and solar energy. What a source of power! I hope we don't have to wait till oil and coal run out before we tackle that.

*Thomas Edison to his friends Henry Ford
and Harvey Firestone (1931)*



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