

## UN Symposium on SDG7

Ensuring universal access to affordable, reliable and modern energy services

Raymond Carlsen, CEO October 19<sup>th</sup>. 2017

#### **Our values**

- Predictable
- Driving results
- Changemakers
- Working together

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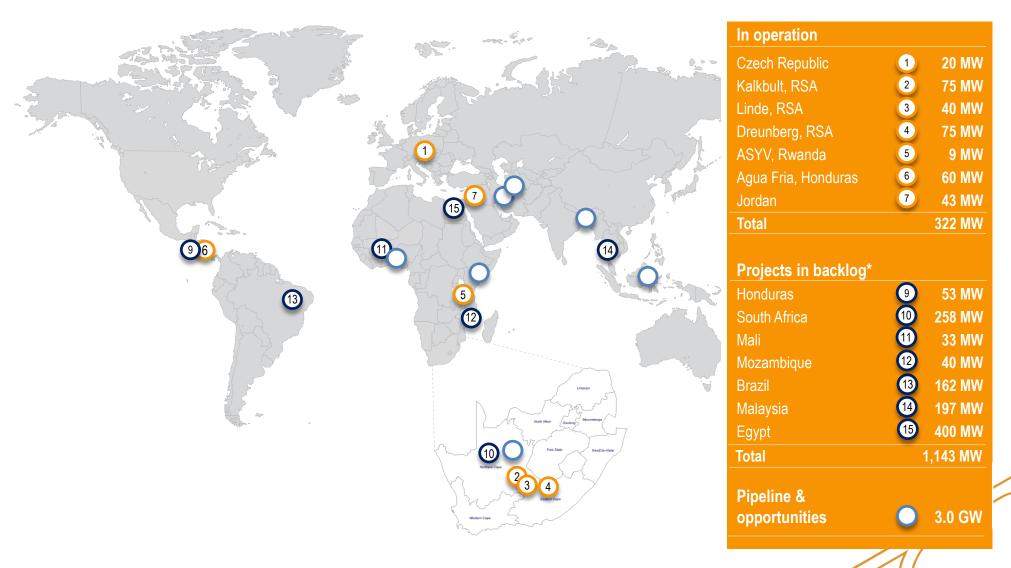
## Introduction Our focus: Utility Scale Solar Power Plants





# Introduction **A growing and diversified asset portfolio**





### PV market: Solar and wind dominate the future of electricity



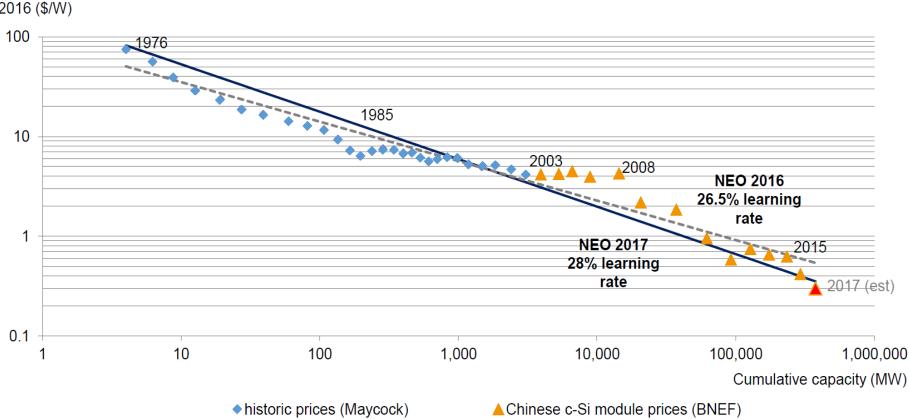
Global cumulative installed capacity: 2016 Smallscale PV 2% Utilityscale PV 3% Onshor e wind Coal 7% 30% Hydro 6,719 GW 17% Nuclear Gas 5% Oil 24% 6%

Flexible capacity Coal Small-13% scale PV 10% Gas 14% Utility-13,919 GW scale PV 22% Nuclear Hydro 3% Onshor 12% e wind 14%

Global cumulative installed capacity: 2040

### PV market: Solar technology is getting cheaper, faster



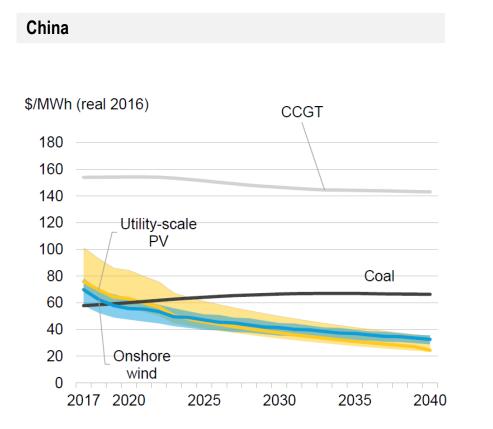


#### 2016 (\$/W)

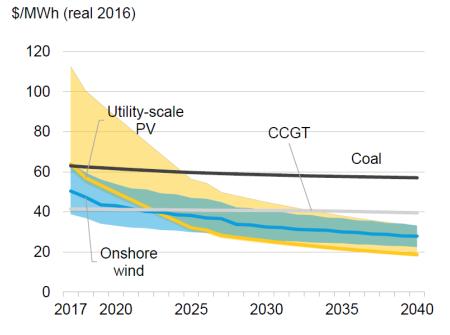
Source: Bloomberg New Energy Finance, 2017

### PV market: **Tipping point: new vs new**



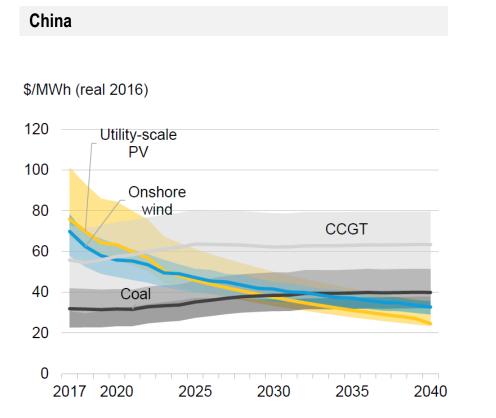


#### U.S.



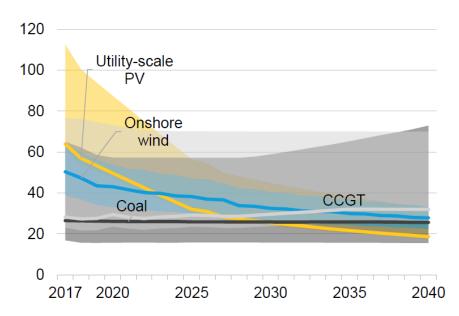
## **Tipping point 2: new vs existing**





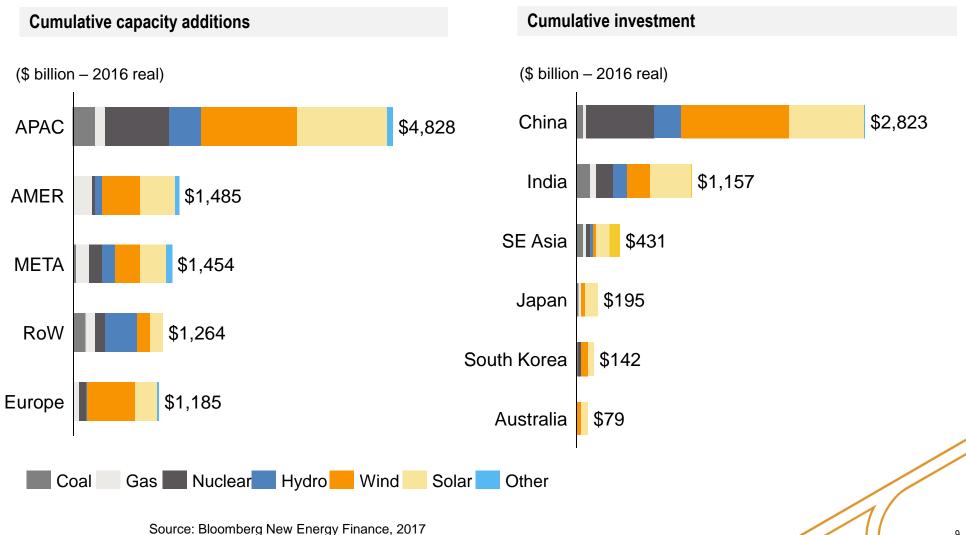
#### U.S.

#### \$/MWh (real 2016)



## **APAC: 47% of investment** China & India: 83% of investment in APAC

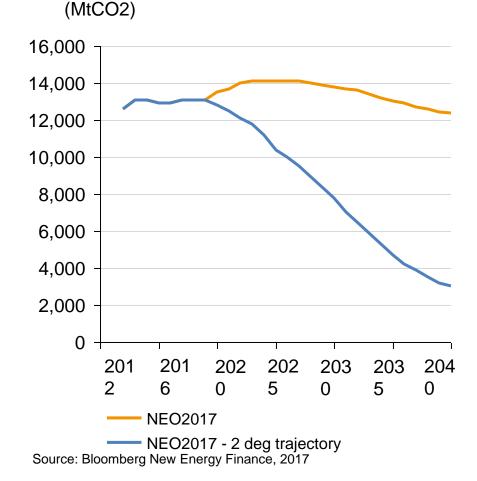




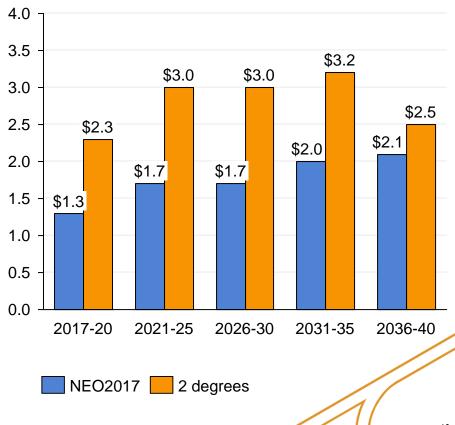
## ...but 2 degree is an additional \$5.3 trillion



**Global power sector CO2 emissions** 



Total investment in zero-carbon capacity



(\$ trillion – 2016 real)

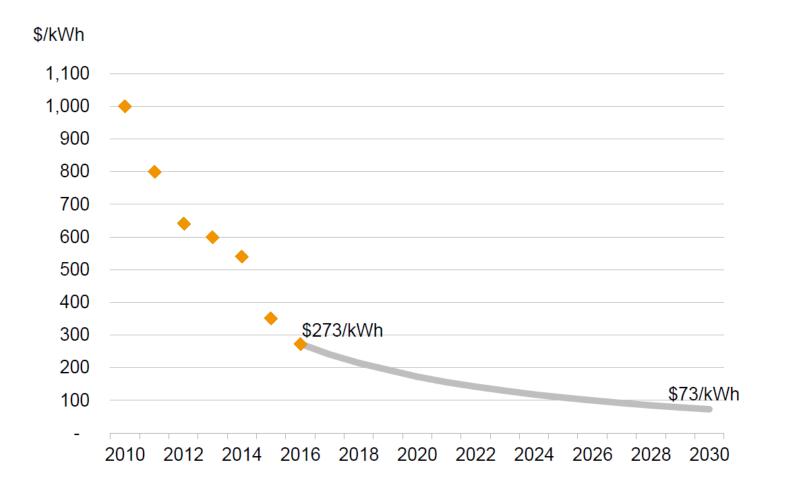
## New technology solutions being considered



PV + battery Storage	PV-Engine off-grid hybrid	Floating solar
PV combined with storage enables energy shifting and supporting utilities with grid stabilizing services	Sustainable power solution for utilities and industrial operations on islands and off-grid locations.	PV panels mounted on floating structures opens for solar energy without using farmlands
ABB, Tesla, AES++	Industry partners	Ciel &Terre (structure), Huawei (inverter)
Opens for new markets and new revenue streams. We also expect storage to be a requirement in future PPA as solar energy penetration increases.	Reduce fuel consumption by >20%. Adding storage can increase fuel saving to >30% plus significantly reduce running hours on the engines.	Alternative to ground mounted systems. Natural cooling increase efficiency.
Commercially available	Pilots have been deployed in different regions	Pilots have been deployed in different regions

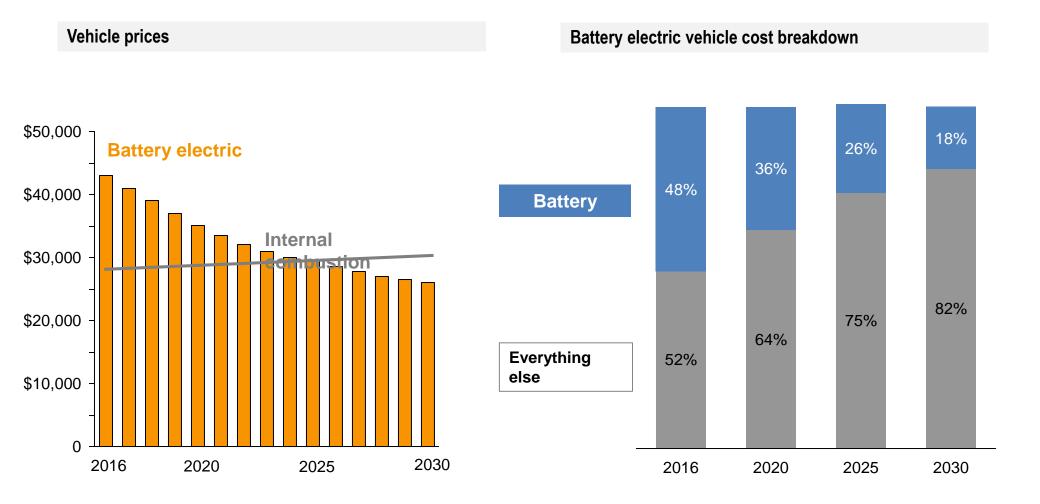
## Li-ion battery prices to fall another 73% to 2030





# Electric vehicles will cost less than internal combustion vehicles in the 2020s





#### Source: Bloomberg New Energy Finance, 2017

# Project backlog Solid progress on projects across backlog (i)



#### Malaysia, 197 MW

- 21 year PPA with TNB
- Capex: MYR 1,240 million

#### Honduras, 53 MW

- 20 year PPA with ENEE
- Capex: USD 100 million

#### Mozambique, 40 MW

- 25 year PPA with EDM
- Capex: USD 80 million







#### Status

- Project finance MYR 1000 million green Islamic Bond – well received in the Malaysian debt market
- · Certain construction activities initiated

#### Status

- Finalising remaining conditions to close financing for first phase (35 MW)
- · Certain construction activities initiated

#### Status

- Finalising remaining conditions to close financing
- Construction preparations ongoing

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## Project backlog Solid progress on projects across backlog (ii)



#### Egypt, 400 MW

- 25 year PPAs with Gov of Egypt
- Capex: USD 450 million

#### South Africa, 258 MW

- 20 year PPA with Eskom
- Capex: ZAR 4,600 million

#### Brazil, 162 MW

- 20 year PPA with ANEEL
- Capex: BRL 680 million

#### Mali, 33 MW

- 25 year PPA with Energie du Mali
- Capex: EUR 52 million



#### Status

- Credit committee and board approval obtained for project finance by bank consortium
- Financial close by end of October

#### Status

• Timing of financial close relies on alignment between Eskom and the various government bodies

#### Status

- · All permits secured for the project
- Good progress on debt and equity structuring

#### Status

- Board approval obtained for IFC project finance and for Partial Risk Guarantee from the World Bank
- Awaiting final board approval by AfDB

# Key activities in development and delivery of Utility scale solar plants



Phases	Origination <ul> <li>Opportunity</li> </ul>	Development <ul> <li>Pipeline</li> </ul>	Structuring <ul> <li>Backlog</li> </ul>	Delivery <ul> <li>Construction</li> </ul>	Power Production O&M • Operation
Key activities	<ul> <li>Partners</li> <li>Stakeholders</li> <li>Award of PPA/Permits</li> <li>Land</li> <li>Initial socialisation of the project</li> </ul>	<ul> <li>Partners</li> <li>Stakeholders</li> <li>Award of PPA/Permits</li> <li>Land</li> <li>Financing</li> <li>Socialisation of the project</li> </ul>	<ul> <li>Partners</li> <li>Stakeholders</li> <li>Procurement</li> <li>Financing</li> <li>Socialisation of the project</li> </ul>	<ul> <li>Partners</li> <li>Stakeholders</li> <li>Land</li> <li>Procurement</li> <li>Tax</li> <li>Cash flows</li> <li>Socialisation of the project</li> </ul>	<ul> <li>Operation and maintenance</li> <li>Sale of electricity</li> </ul>

## A truly sustainable business model

- Solar plants embedded in local communities in emerging economies for 20-25 years
- Economic activity is of vital importance to both countries and communities
- Local suppliers, local employees and good relations with local communities impact performance, cost and risks
- Environmental and Social Impact Assessments are undertaken at the start of the project phase
- Community relations, social and environmental impacts are managed as an integrated part of the business
- Specialist advisors engaged to manage CSR and Economic Development programs

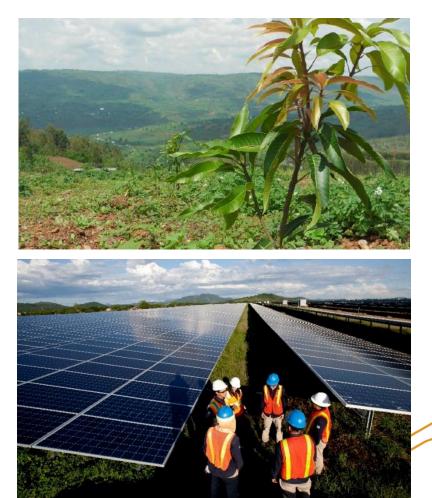






## Environmental, social and governance integration

- Operate in line with the Equator Principles and IFC Performance Standards
- Work with trusted business partners (IFC, Norfund, KLP and more)
- Conduct Environmental and Social Impact Assessments for all projects
- Grievance mechanism





## Local job creation



PROJECT	JOB CREATION (DURING THE PEAK CONSTRUCTION PERIOD)	% LOCAL EMPLOYEES (CITIZENS)	NO. OF WORKERS WITH DOCUMENTED SKILL ENHANCEMENT
Agua Fria	1,050	82%	27 <sup>2)</sup>
Utah Red Hills	192	92%	301)
Jordan portfolio	585	N/A	N/A
Linde	550	70%	791)
Dreunberg	1,400	77%	1421)
ASYV	600	85%	400 <sup>2)</sup>
Kalkbult	900	80%	N/A
Czech portfolio	133	N/A	N/A ·
Total	5,410	81% on average	926

1) Workers certified.

2) Workers with formalised documentation of experience.

## Summary

- Technology innovation and cost reductions make solar the lowest cost source of electricity
- Emerging economies are taking advantage of renewables – low cost, clean and rapidly deployed
- Scatec Solar is set to grow and strengthen its position as an emerging market focused IPP
- Partnerships and new business models are being explored for additional growth opportunities

## Growth target (MWs) 745 1,300 - 1,500 1,143 322 In operation Pipeline In operation Backlog and under construction by end 2018





# Thank you

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