

Innovative Technology Solutions for Sustainability



# ABENGOA

### **E&C: The backbone of Abengoa**



Manuel Valverde E&C Executive VP 8th Annual **Analyst and Investor Day** April 3 & 4, 2014

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#### **E&C Capabilities** Sectors

### 70 Years of Experience in Carrying Out Turnkey Projects

#### **Energy Generation**

- Renewable energy <u>Solar</u> <u>plants</u> (tower, parabolictrough, solar-gas hybrid, PV) and <u>wind power.</u>
- Conventional generation (combined cycle, cogeneration, biomass, etc.).
- Biofuels (bioethanol, biodiesel, ETBE).



# Transmission and distribution (T&D)

### Large scale transmission systems (AC and DC):

- Transmission lines.
- Electrical substations.

# Water and environment

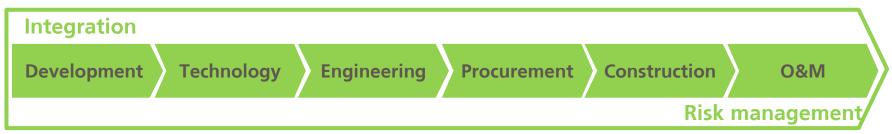
- Desalination plants.
- Water treatment and recycling.
- Water transport and distribution.





#### **E&C Capabilities** Entire value chain

### **Covering entire EPC and O&M value chain**



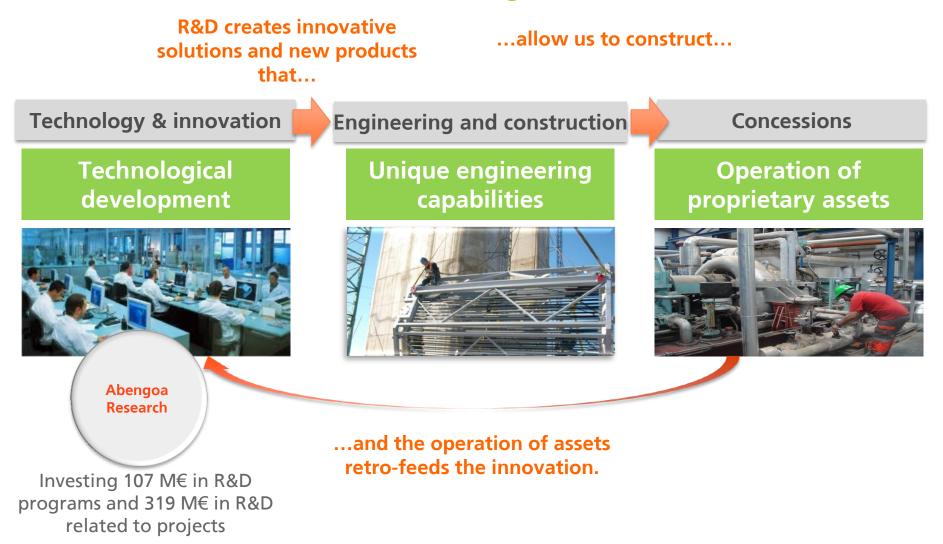
#### Competitive advantage through:

- **Standardization** of activities through clearly defined procedures
- In-house capabilities: Critical activities are executed by own resources or through stable strategic alliances
- **Solid engineering capacities** that enable us to capture growth opportunities.
  - Design engineering network with centres in USA, Mexico, Chile, India, Poland, and Spain.
- **Procurement global network** allow us to offer tailored made products.
- Vertical integration on value added supplies with own manufacturing facilities in USA, China, India, Israel, Mexico and Spain. (e.g. mirrors, structures, receiver tubes, control rooms...)



**E&C Capabilities** Business model

### Technology and Innovation Are the Basis for Our Competitive Advantage



#### **E&C Capabilities** Proven technology

### **Proven Innovative Technologies Already in Commercial Phase**

Sector		Type Project	Size	Date	_	
	>	PS10 first commercial CSP Tower in the world	11 MW	2007	$\checkmark$	
	>	<b>PS20 second commercial</b> CSP Tower in the world	20 MW	2009	$\checkmark$	
	>	Khi Solar One first of its kind superheated CSP tower <b>being built</b> in Southafrica	50 MW	2014*		
	>	Solana's molten salt storage system running efficiently, providing up to 6h of extra generation	280 MW	2013	$\checkmark$	C MARK
<b>?</b> 7	>	Ain Beni Mathar first hybrid solar-gas plant worilwide	470 MW (20 MW from CSP)	2010	$\checkmark$	1. 1.
<b>X</b>	>	Hassi R Mel first hybrid solar-gas plant in Argelia	150 MW (20 MW from CSP)	2011	$\checkmark$	
	>	Hugoton plant, the first Abengoa 2G biorefinery commercial-scale in Kansas.	100 ML	2014*		
	>	Line Biswanath 800 kV in High voltage direct current	291 Km	2013	$\checkmark$	
	>	Line Porto Velho-Araraquara 600 kV in Brazil	2,375 Km	2014*		



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Credibility in the Market Ranking position

### **Competitive Position Recognized Worldwide**





- #1 in electricity infrastructure (Power)
- #1 in Solar

**Power Generation** 

#### #4 in Cogeneration

Source: ENR Ranking 2013 of major international contractors



### Transmission



#1 in T&D

Source: ENR Ranking 2013 of major international contractors





#12 EPC company in the world by installed capacity

Source: Global Water Market 2014

7th international contractor in the **USA** (ENR 2013)



5th international contractor **in Latin America and Caribbean** (ENR 2013)

#### Credibility in the Market Track Record

Excellent Execution Track-record, for Both EPC and Concession Type Projects, Always on Budget, Cost and Performance



#### **Power Generation**

+ 7 GW of installed power in conventional generation plants





Nuevo Pemex (Mexico) Cogeneration 300 MW

**Stalowa Wola** (Poland) Combined Cycle 450 MW



#### Transmission and distribution

+ 45,000 km (+28,000 mi) of T&D lines



Brazil 2,500 km



Peru 872 km

#### 🐑 Solar

1,700 MW completed and 450 MW under construction in Concentrated Solar Power (CSP)



**Solana** (USA) CSP parapolic trough 280 MW



Khi Solar One (South Africa) CSP Tower 50 MW

Water

+1,300 ML/day (+344 MGal/day ) desalination capacity



Skikda (Algeria) 100,000 m<sup>3</sup>/ay



Qingdao (China) 100,000 m<sup>3</sup>/day



Time schedules



Budget





#### Credibility in the Market Consolidate Client

#### **Diversified Client Base Across Geographies**



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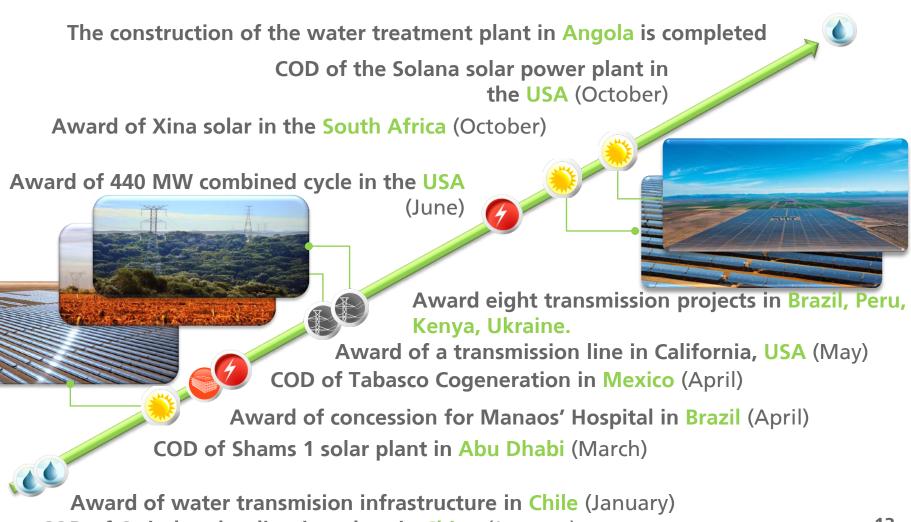
Conclusions

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**Business Sustainability** 2013 key milestones

### **2013: Another Year of Important Milestones**



**COD of Quindao desalination plant in China** (January)

#### **Business Sustainability**

Discipline at bidding & execution phase

#### Assuring Sustainability of the Margins Through our Discipline at..

#### bidding phase...

Project pre-desing	<ul> <li>Complete definition of technical solution</li> <li>Firm proposal from critical suppliers</li> <li>Exhaustive risk analyses applying MC methodology and related contingencies</li> </ul>	
Contractual Model	<ul> <li>Quantified limits for responsibilities.</li> <li>Clear definition of acceptable terms.</li> <li>Transfer risk assessment to contract terms</li> </ul>	
Financial Model	<ul> <li>Guarantee positive cash-flow.</li> <li>Avoid foreign currency risk through hedging.</li> <li>Eliminate collection risk</li> <li>Other insurances to cover project specific risks.</li> <li>EPC Margin ≥ Equity Contribution</li> </ul>	<u>/</u> !

#### ...and at execution phase.

Monthly report per project

**Budget & CF** 

follow-up

Critical projects

ollow-up

- Standardized format including:
  - Execution progress
  - Schedule, etc.
- Report by Project manager.
- Monthly budget achievement review by independent controller providing guidance on year end.
- Weekly forecast report on cash flow for every month and the year end.
- Independent audit & follow-up of the risks detected in proposal phase by Chief risk manager.
- Every month the most critical projects are followed up by CEO & top management to measure progress and identify risks.

#### Same methodology applied for Turnkey & Concession-type projects.

#### **Business Sustainability** Vertical integration

### Vertical Integration on Value Added Supplies Contribute to Assuring Margins and Commitments

#### **Power structures**

 Design, test and manufacturing of steel structures for transmission lines, substations, thermosolar and PV plants, wind power generation and telecommunication towers



India





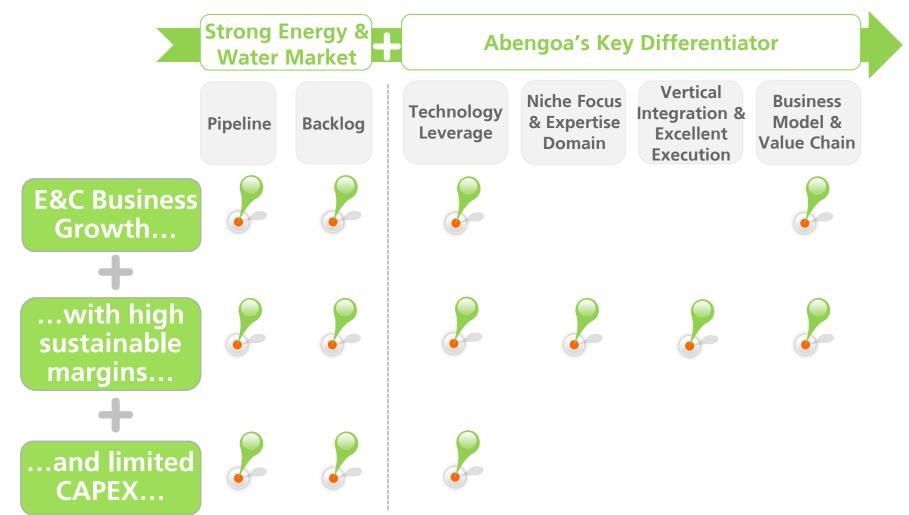
### **Ancillary Manufacturing**

- Electrical boards & cabinets, power electronics, and control electronics.
- Motor control centers, relay frames and electronic cards.



**Bright Future Ahead** 

### Sustainable Growth with Attractive Margins and Limited CAPEX Investments is a Reality



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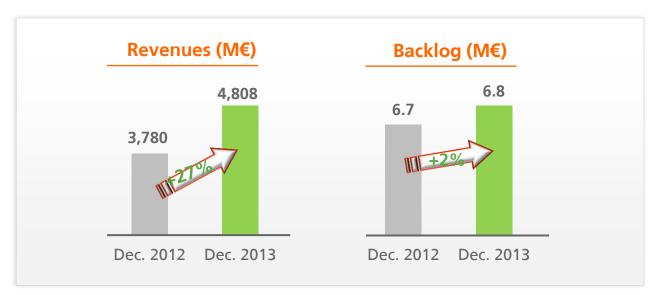




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Bright Future Ahead Backlog

The Pipeline Conversion into New Projects Has Allowed us to Maintain our Backlog while Increasing Revenues by 27%



- > Approx. 54% of total backlog expected to convert into revenues in 2014E
- > Representing more than 17 months of E&C revenues
- > New significant awards in Q1 2014: CSP Chile, UK Railway, Desalination in Morocco

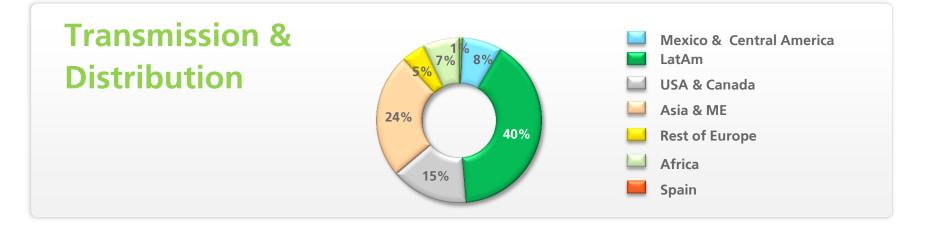


Bright Future Ahead Pipeline (B€)

#### Growing Pipeline of Opportunities Spans Great Visibility on Future



#### Bright Future Ahead Pipeline T&D



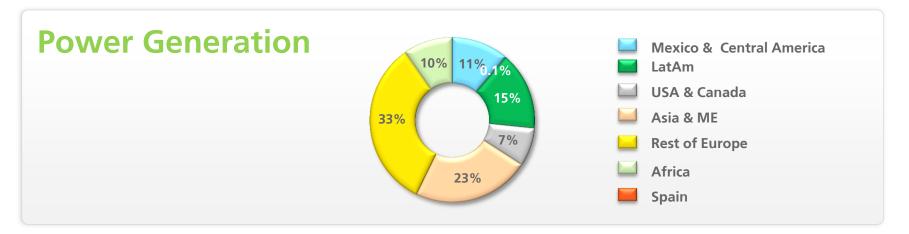


- **Brazil**: Grid expansion of ~ **42,000 km in 2014 2022**
- Peru: Grid expansion of more than 3,100 km new lines in 2012 2022
- Chile: Important opportunities in T&D projects: 1,7 B\$ investment till 2020



- Asia: Steady economic growth is fuelling a strong increase in energy, creating large opportunities : more than 500 B\$ until 2020
- ~100 B\$ investments in T&D in India until 2020
- ~30 B\$ investments in T&D in Middle East until 2020

### **Bright Future Ahead** Pipeline Power Generation



- USA replacement of coal plants by shale gas and renewables. Coming opportunities in B2G
- **Stable Abengoa presence** in USA, Brazil, Chile, Uruguay, Mexico, Peru, Colombia, Argentina
- Mexico: strong relationship with CFE & Pemex (long track record & strong pipeline of projects)

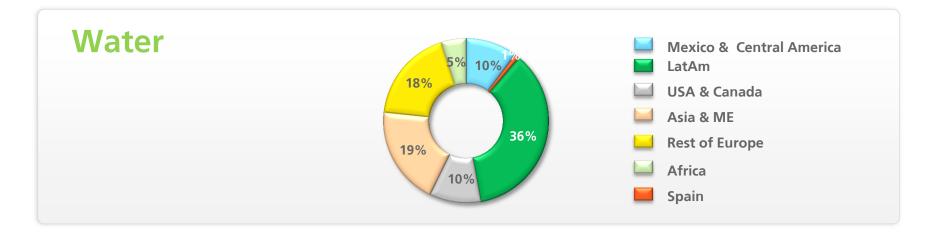


- Strong need to reduce coal based generation in Eastern Europe (focus on gas, biomass, etc.)
- Leverage our local presence in Poland
- Africa: Huge potential for solar power plants and conventional generation



- Middle East: Titanic increase in power demand with special focus on renewables.
- Need for new energy infrastructures with special focus on hybrid solutions (conventional/renewable plants).
- South East Asia outstanding power demand based on coal & conventional working on alliances with Chinese and Korean partners

#### Bright Future Ahead Pipeline Water



- USA brackish water type projects
- Mexico & Brazil: need of large water pipelines to bring water to the populated areas
- Desalinated water need for industrial use in Chile, Peru and rest of Latam



 Africa: relevant opportunities in desalination plant and IWRM projects in both North and Sub-Saharan Africa



- Middle East & India: opportunities in desalination and transmission water projects
- Asia-Pacific: Opportunities identified in Brunei, Philippines, Indonesia and Singapore for water treatment & waste water treatment plant

#### Main Takeaways

Strong E&C capabilities Wide product portfolio

**Covering entire EPC and O&M value chain** 

Based on technology & innovation

Business Credibility & Sustainability

- Worldwide recognition & excellent track record
- Discipline at bidding & execution phases
  - Same methodology applied to turnkey and Concession type projects





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# ABENGOA Thank you!