Italian | Norwegian | Energy Dialogue

SOLUTIONS FOR THE FUTURE

Sorgent.e®

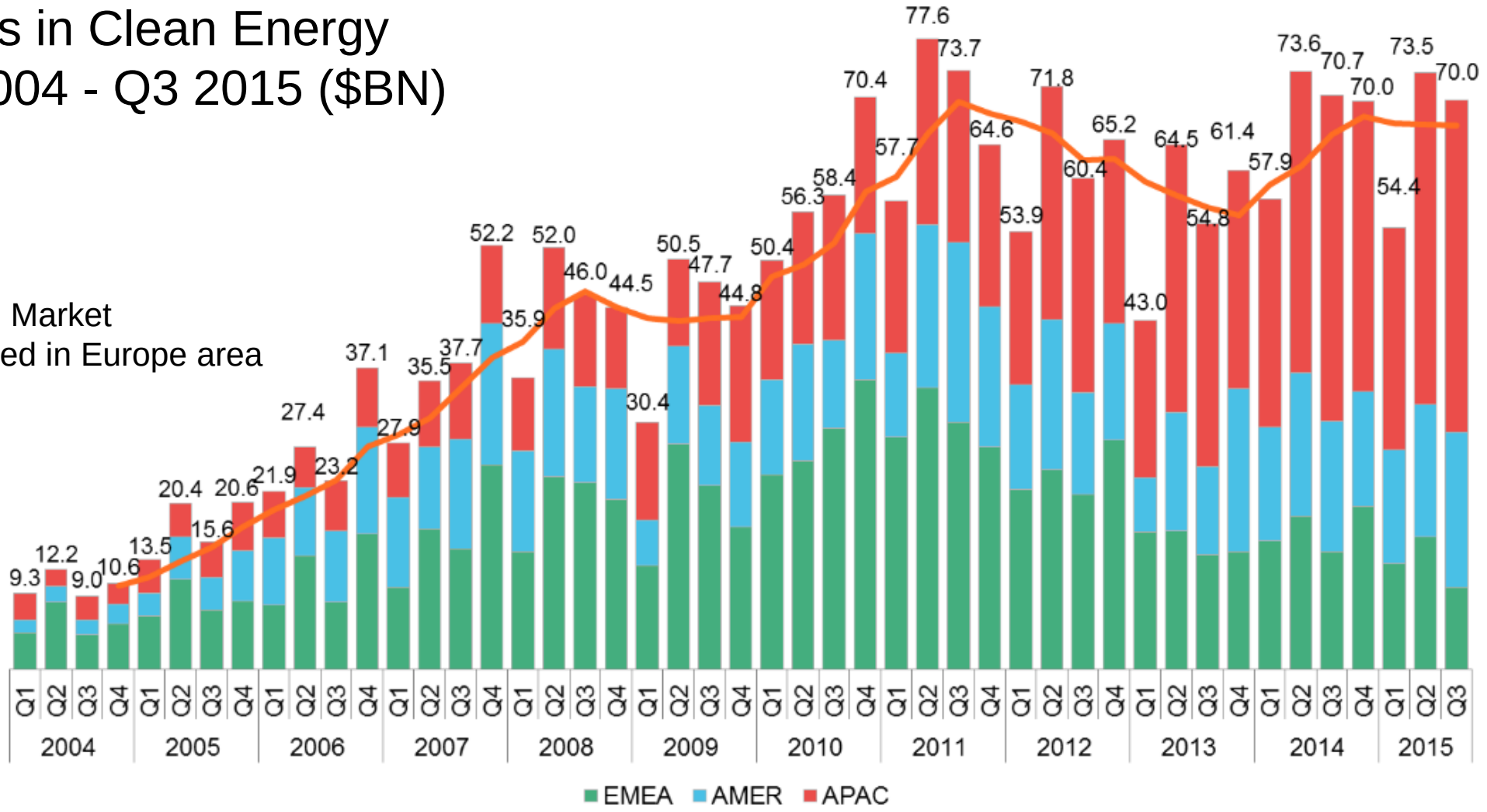
Vertical Integration as Key of Success in Global Hydro Market

Milan, Friday April 8th, 2016

HOW IS RENEWABLE GLOBAL MARKET?

New Investments in Clean Energy by Region Q1 2004 - Q3 2015 ($BN)

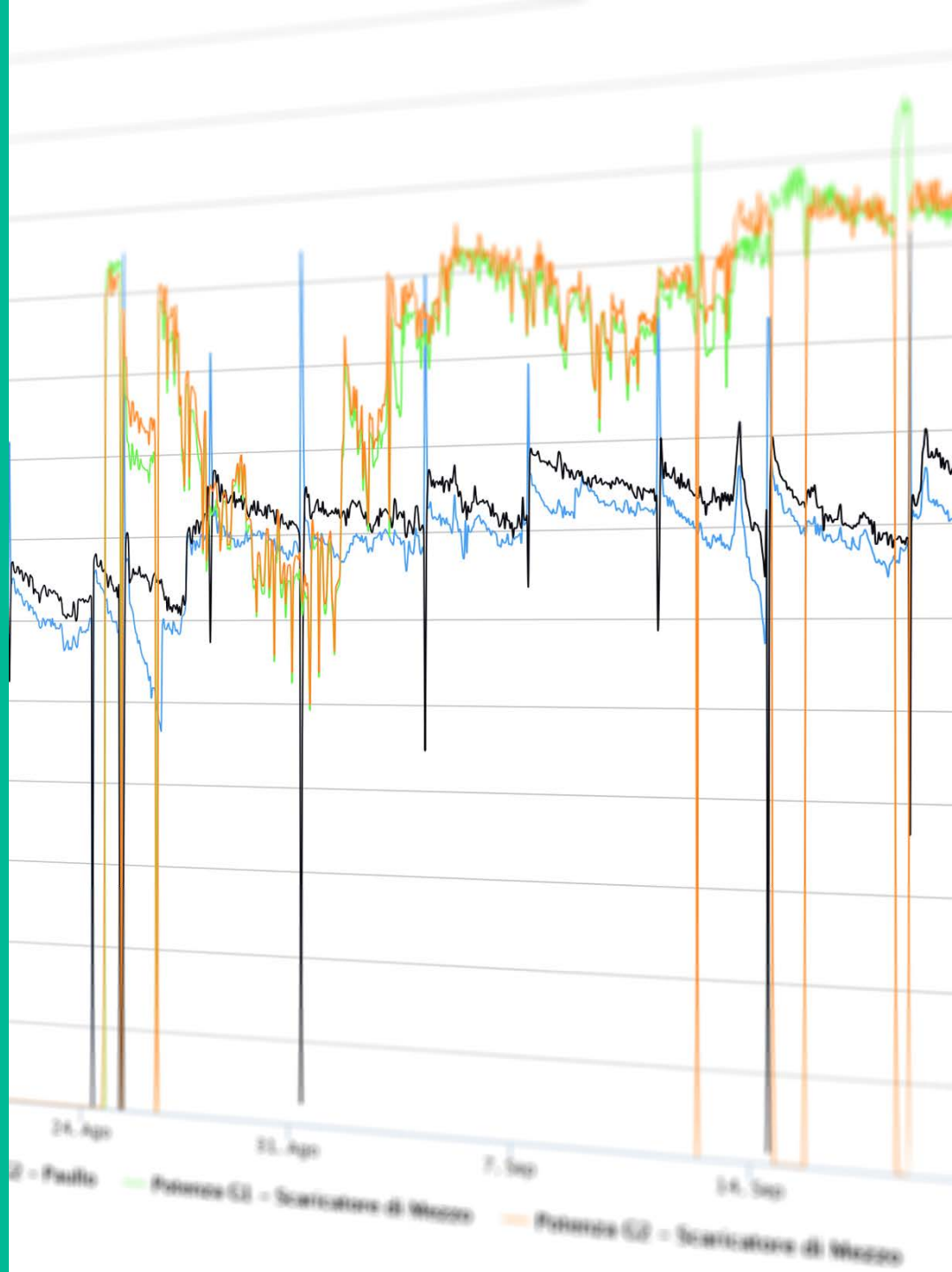
- Clean Energy Global Market dramatically decreased in Europe area



GLOBAL CLEAN ENERGY TRENDS

What has happened in Europe?

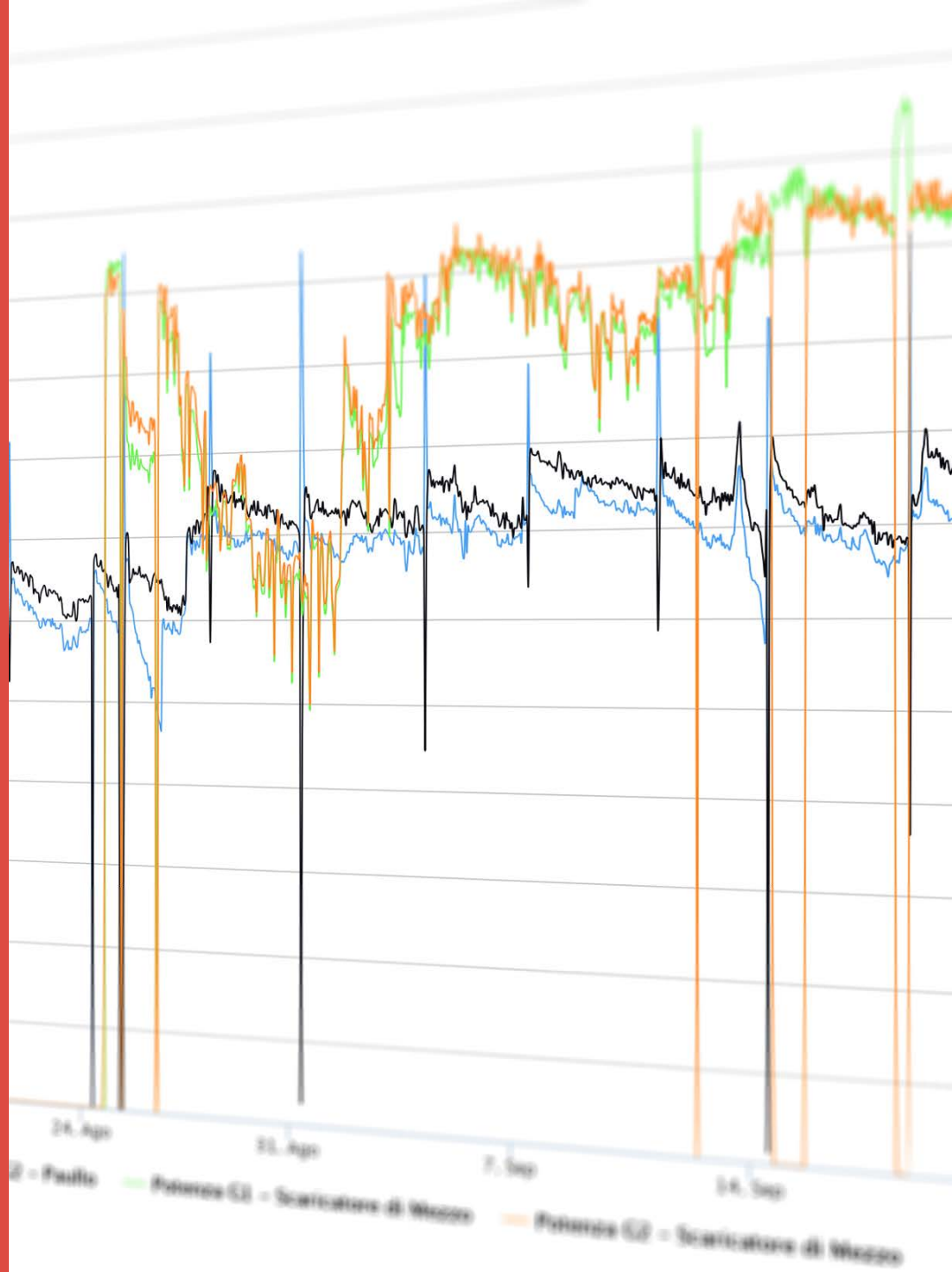
- Spectacular ramp in clean energy investment (2004-2011) and in 2012 the trend has changed
- Slow GDP growth in developed economies that dampens the allure of investments in renewable energy ventures with uncertain returns
- Crisis of economies, prices of oil and commodities and fiscal constraints have compelled Western governments to reduce financial incentives for renewable energy development
- Persistent uncertainties over the policy and regulatory environment of renewable energy that discourage potential investors
- The diminished political imperative of greenhouse gas reductions, illustrated by the United Nations Climate Change Conference in Copenhagen that failed to produce a robust successor to the Kyoto Protocol
- An evident conflict between subsidized and conventional energies due to overcapacity



GLOBAL CLEAN ENERGY TRENDS

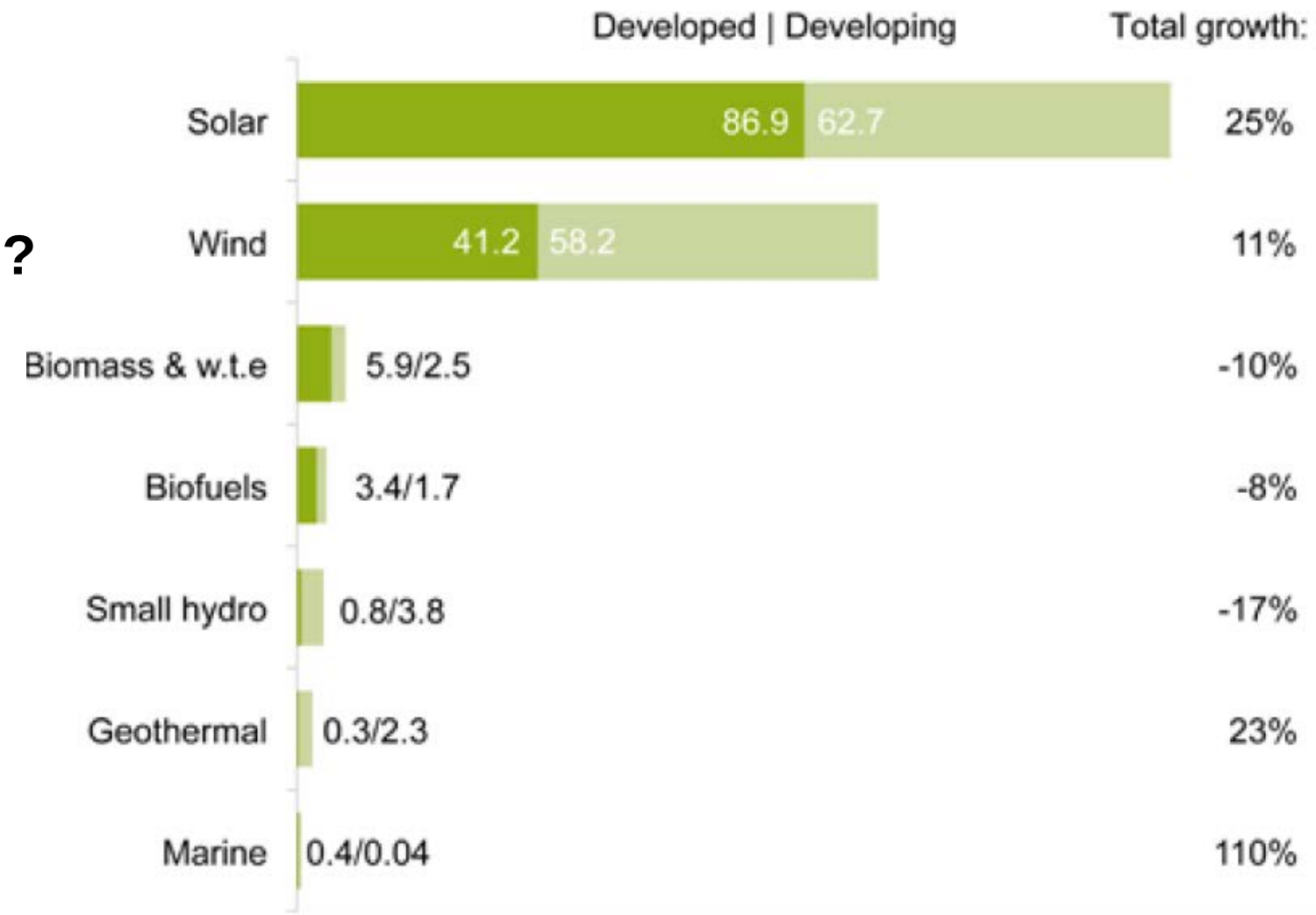
Some consequences & effects for Renewable Investors in EU

- **Cost competition: the shift from policy-driven to economically-driven growth**
- **Geographic diversification: Developed -> Emerging**
- **Cost reduction: new technology developments and industry over capacity (wind and PV)**

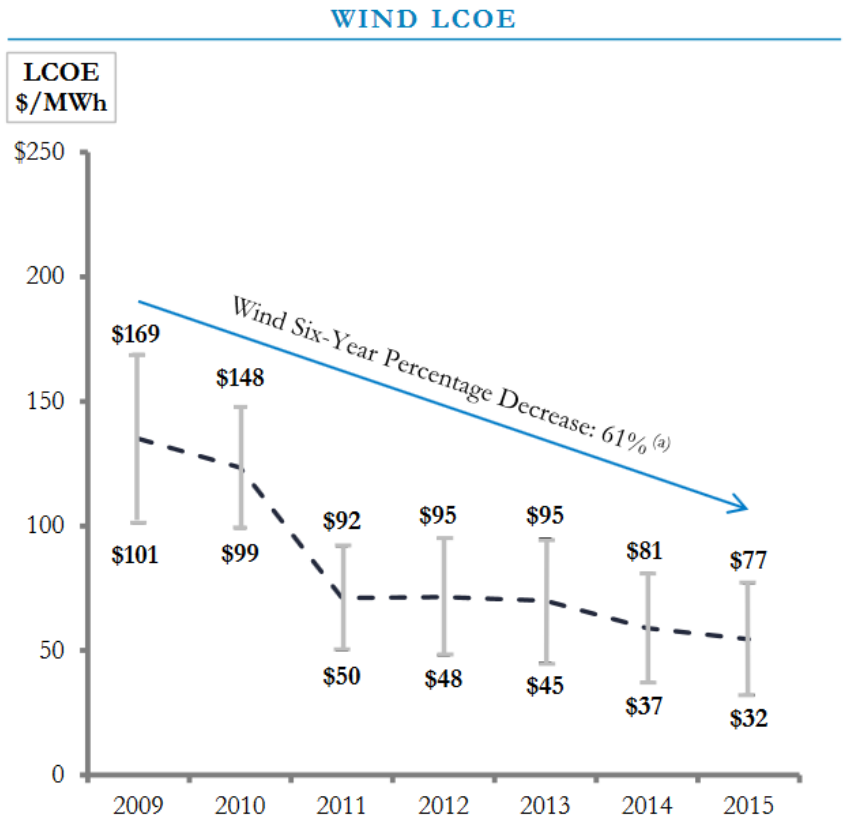


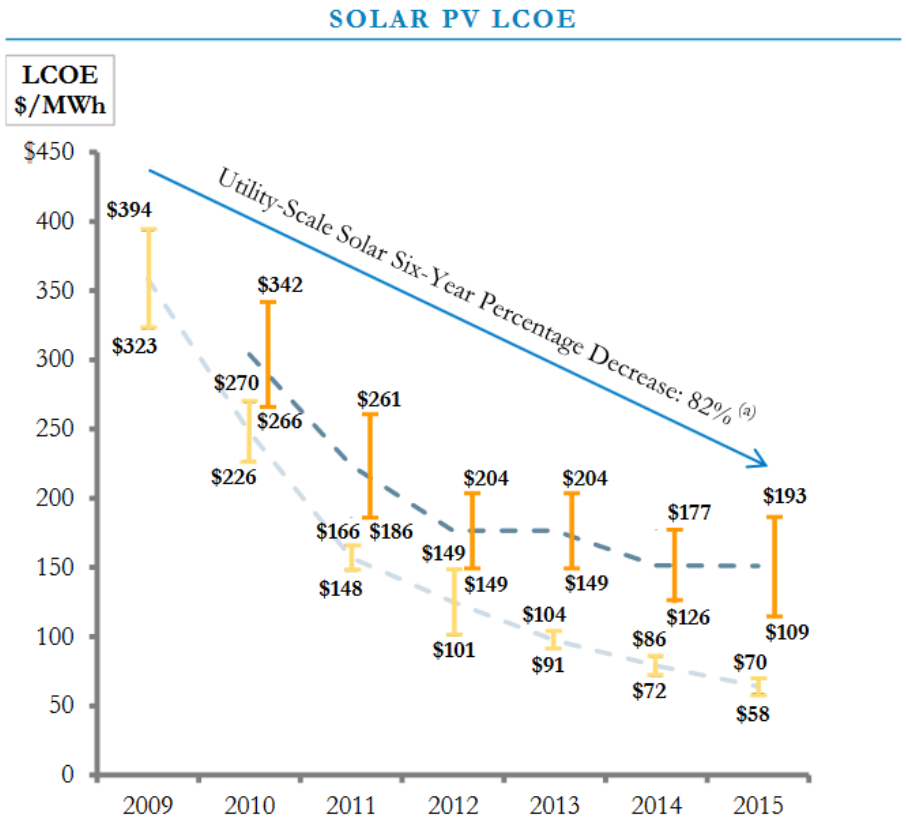
DEVELOPED VS EMERGING

Where investments are concentrated today (and which technologies)?



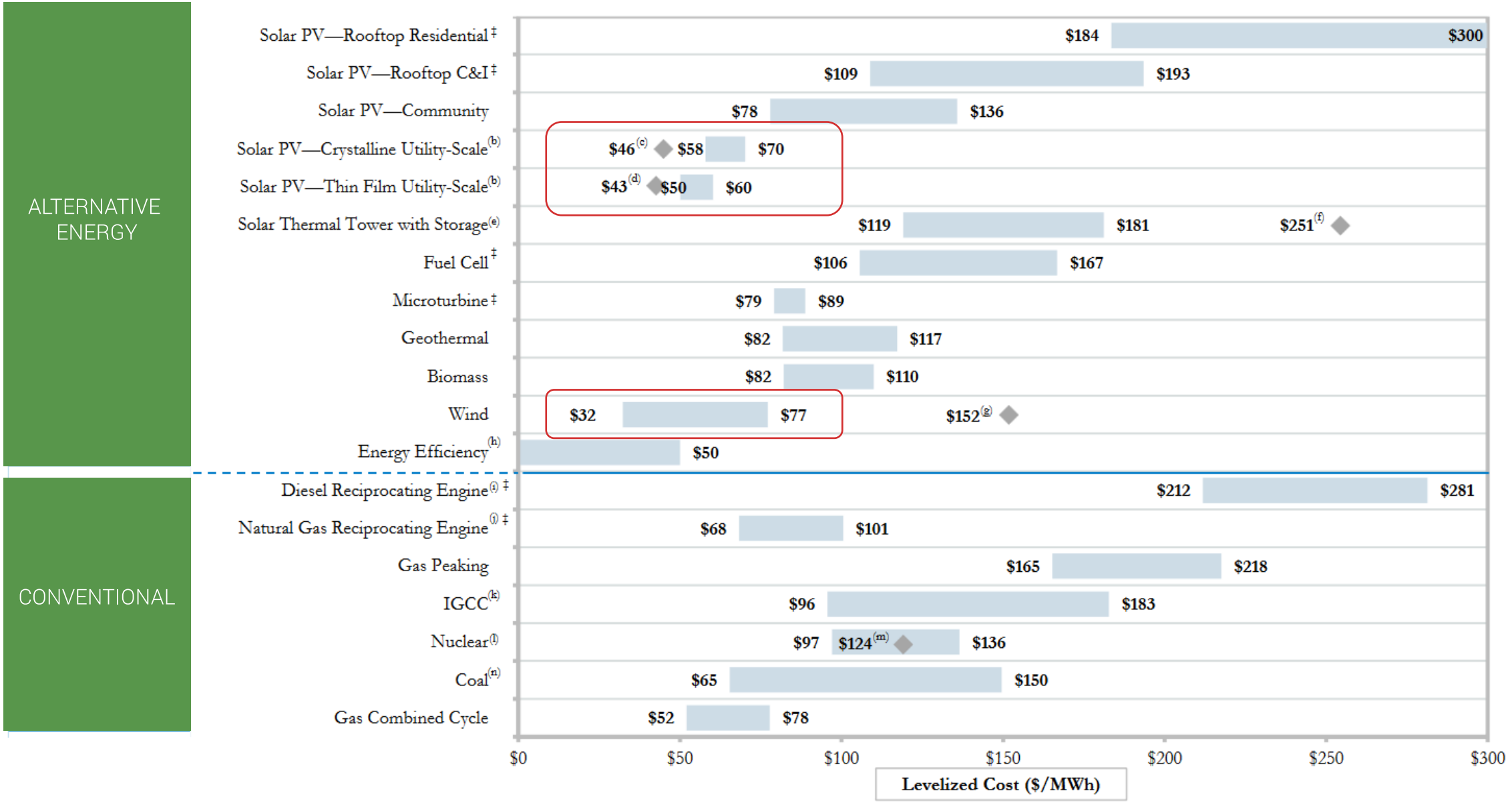
GLOBAL MARKET: INCREASE OF COMPETITION





- Reference markets are Wind / Solar PV, based on historical data: driver markets for all the renewable energy sector
- Material declines in the pricing of system components and improvements in efficiency have lead Wind and Solar PV market to be cost competitive with conventional generation: renewable energy markets have become very competitive

LCOE IN UNSUBSIDIZED MARKETS



MARKETS HIGHLY COMPETITIVE

Case Study: LATAM Energy Tenders 2016 (Peru and Mexico)

PERU

Public Tender on Jan 2016
Eleven packages of wind
and solar projects were sold
at an average price of $41.80
per megawatt-hour.
Prices for solar averaged $40.50
per megawatt-hour,
while prices for wind averaged
$43.90.

MEXICO

Public Tender on March 2016 Eleven packages of wind, solar and hydro projects were Sold at an average price of $44 per megawatt-hour. Prices for solar averaged $48 per megawatt-hour, while prices for wind averaged $37 and prices for hydro Averaged $50

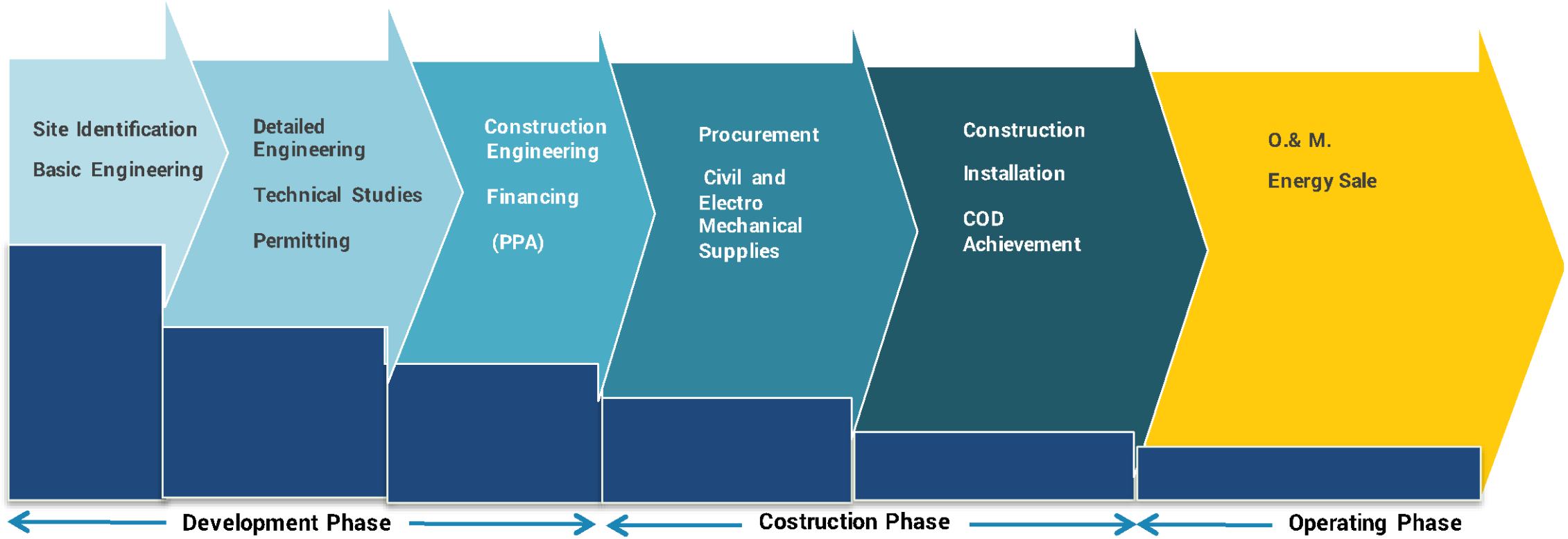
APPROACHES TO BE COMPETITIVE

Our Approach in a new Global marked trends include:

- Cost Reduction
  - Outsourcing
  - Investment in R&S
- Ecological Approaches
  - New Fish-friendly Turbine
  - New Visual impact approach
- Social & Local development
  - Economical & Financial benefits
  - Cultural & Social development
- Vertical Integration

VERTICAL INTEGRATION

Diagram below shows the life line of an hydropower project in phases, representing as well the chain of the project value



Vertical Integration means participation to the different phases of the project life, aimed to maximise, protect (cost control) and preserve the value. Further benefits include increasing of the commercial relationship and ensuring the presence in the Regions

INTEGRATION IN DEVELOPMENT PHASE

Site Identification

Basic Engineering

HOW TO INTEGRATE:

- **Hiring local employees / relocating people in the Regions**
- **Developing construction / supply company active in the markets**
- **Developing engineering / internal engineering team**
- **Framework / Participation agreements with engineering and local players**

Detailed Engineering

Technical Studies

Permitting

HOW TO INTEGRATE:

- **Developing engineering / internal engineering team**
- **Framework / Participation agreements with engineering and local consultants**
- **Developing internal legal department**

Construction Engineering

Financing

PPA

HOW TO INTEGRATE:

- **Developing engineering / internal engineering team**
- **Framework / Participation agreements with engineering and local consultants**
- **Developing internal legal department**
- **Developing internal financial department**
- **Cooperation with Lenders and Funds for Development**

INTEGRATION IN OTHER PHASE

Procurement

Civil and Electro Mechanical Supply

HOW TO INTEGRATE:

- **Hiring local employees / relocating people in the Regions**
- **Developing engineering / internal engineering team**
- **Framework / Participation agreements with engineering and suppliers**
- **Developing and owning:**
  - **civil works construction company**
  - **electro mechanical company**
  - **turbine supply company**

Construction and Installation

COD Achievement

HOW TO INTEGRATE:

- **Hiring local employees / relocating people in the Regions**
- **Developing supervision team**
- **Developing and owning:**
  - **civil works construction company**
  - **electro mechanical company**
  - **turbine supply company**

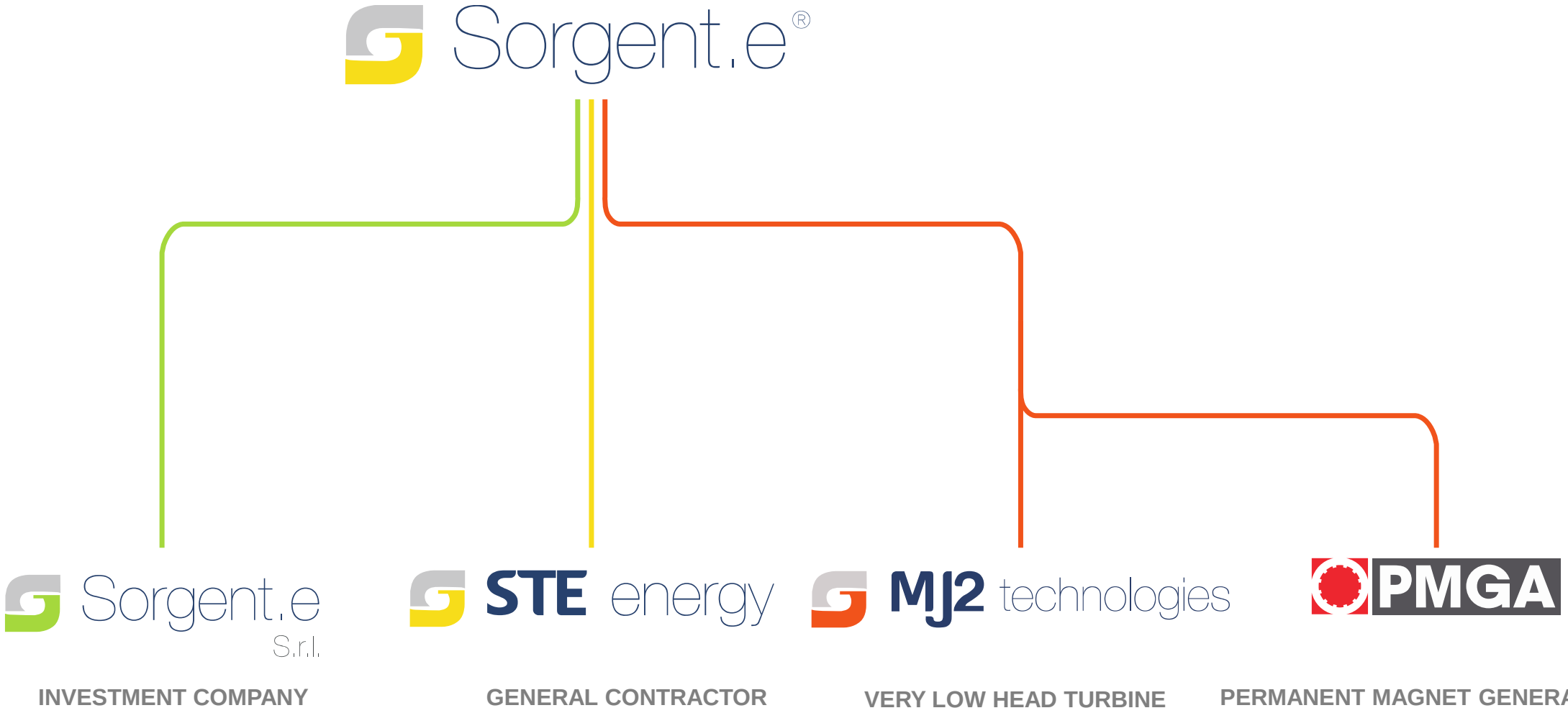
O & M

Energy Sale

HOW TO INTEGRATE:

- **Developing and owning O&M Company**
- **Developing trading department / framework agreements with trading companies**

CASE STUDY: SORGENT.E

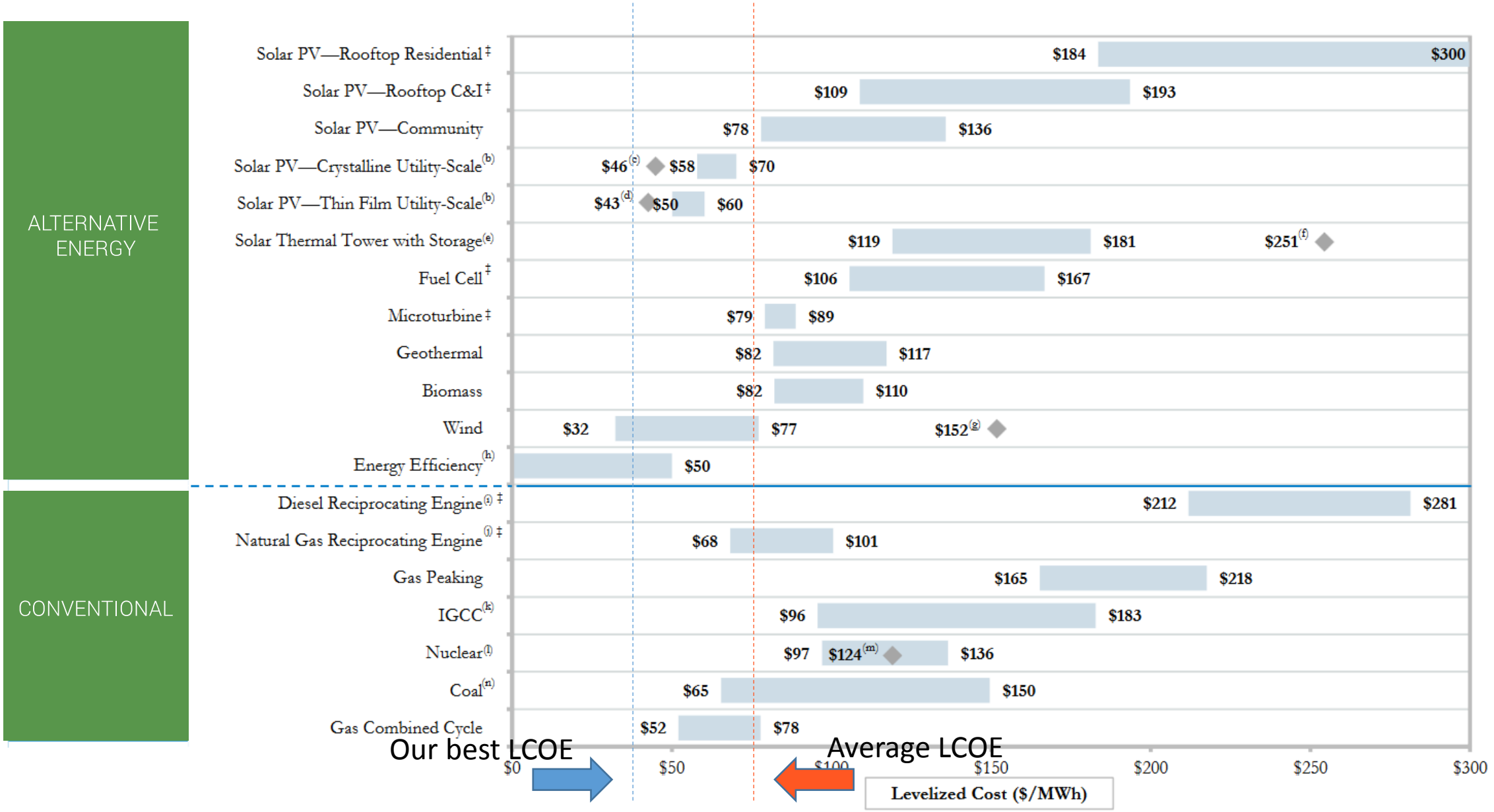


CASE STUDY: SORGENT.E

- The Group has successfully implemented a vertical integration strategy aimed at strengthening the long-term value creation.
- Sorgent.e is able to provide its customers a full array of services ranging from the scouting of the sites, management and O&M of the plant.
- Covering the entire hydro power industry chain allows Sorgent.e to:
  - maximize the technical value of each project as well as the overall profitability;
  - build strong relationships with primary players within the renewable energy industry and with the main financial institutions worldwide;
  - take advantage of cross selling opportunities and seize direct investments;
  - get in-depth knowledge of each reference market before investing own equity.

		Sorgent.e	S.T.E. energy	MJ2 technologies
DEVELOPMENT	Site Identification Basic Engineering	✓		
	Detailed Engineering Technical studies Authorization	✓		
	Engineering construction Financing PPA	✓		
CONSTRUCTION	Supplies & Procurement Generators – turbines Electrical-engineering works		✓	✓
	Civil works and infrastructure Assembly Commissioning		✓	✓
MANAGEMENT	O.&M. Energy Sales	✓	✓	

SORGENT.E LCOE



QUITARACSA

PARTNER	RAINPOWER
CLIENT	Enersur S.A. - GDF Suez
COUNTRY	Peru
YEARS	2011-2015
CONTRACT	Turnkey design, supply and assembly of electrical and automation works
FEATURES	2 x 56.000 kW Pelton

PETACON (UNDER DISCUSSION)

PARTNER	NORFUND
CLIENT	Sorgent.e
YEARS	2016-2018
FEATURES	2 x 7.500 kW Pelton

FOR FURTHER INFORMATION

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