

# Alstom and Ecotècnia

June 2008

*We are shaping the future*

**ALSTOM**

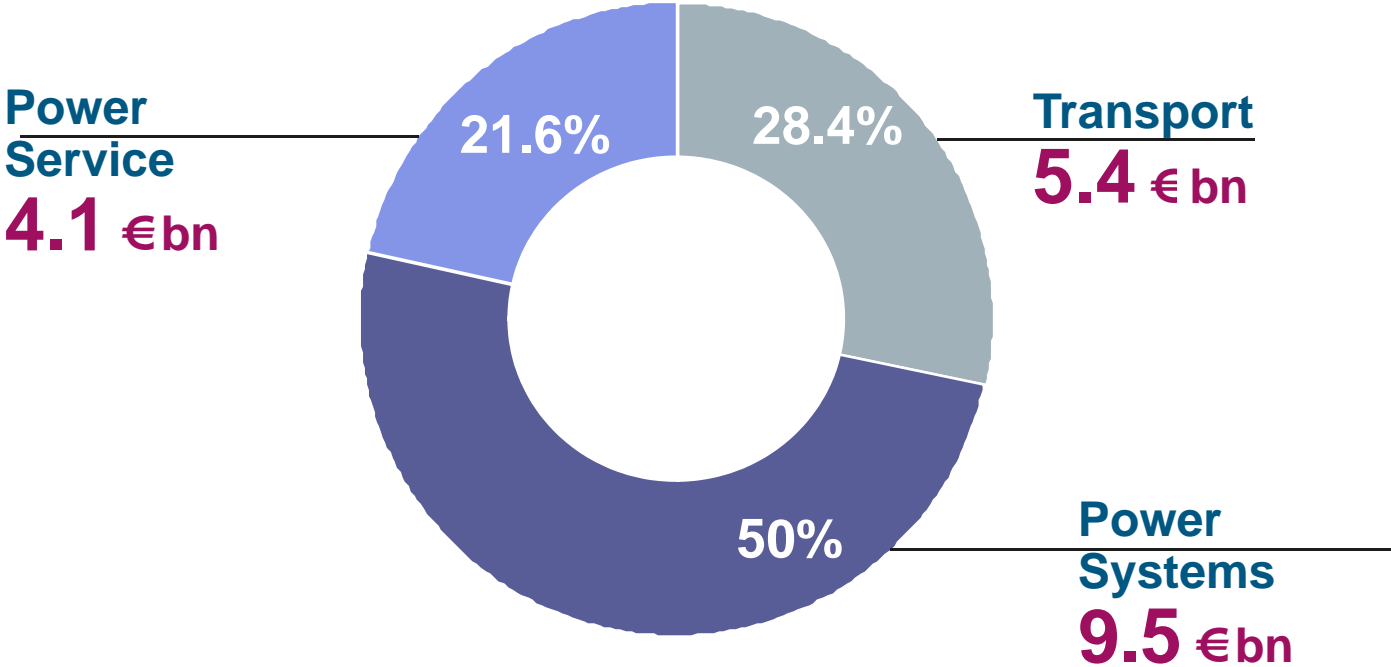
ALSTOM Today

Power: Power Systems, Power Services

Alstom and Ecotècnia

# The Group

## Two main activities, three sectors



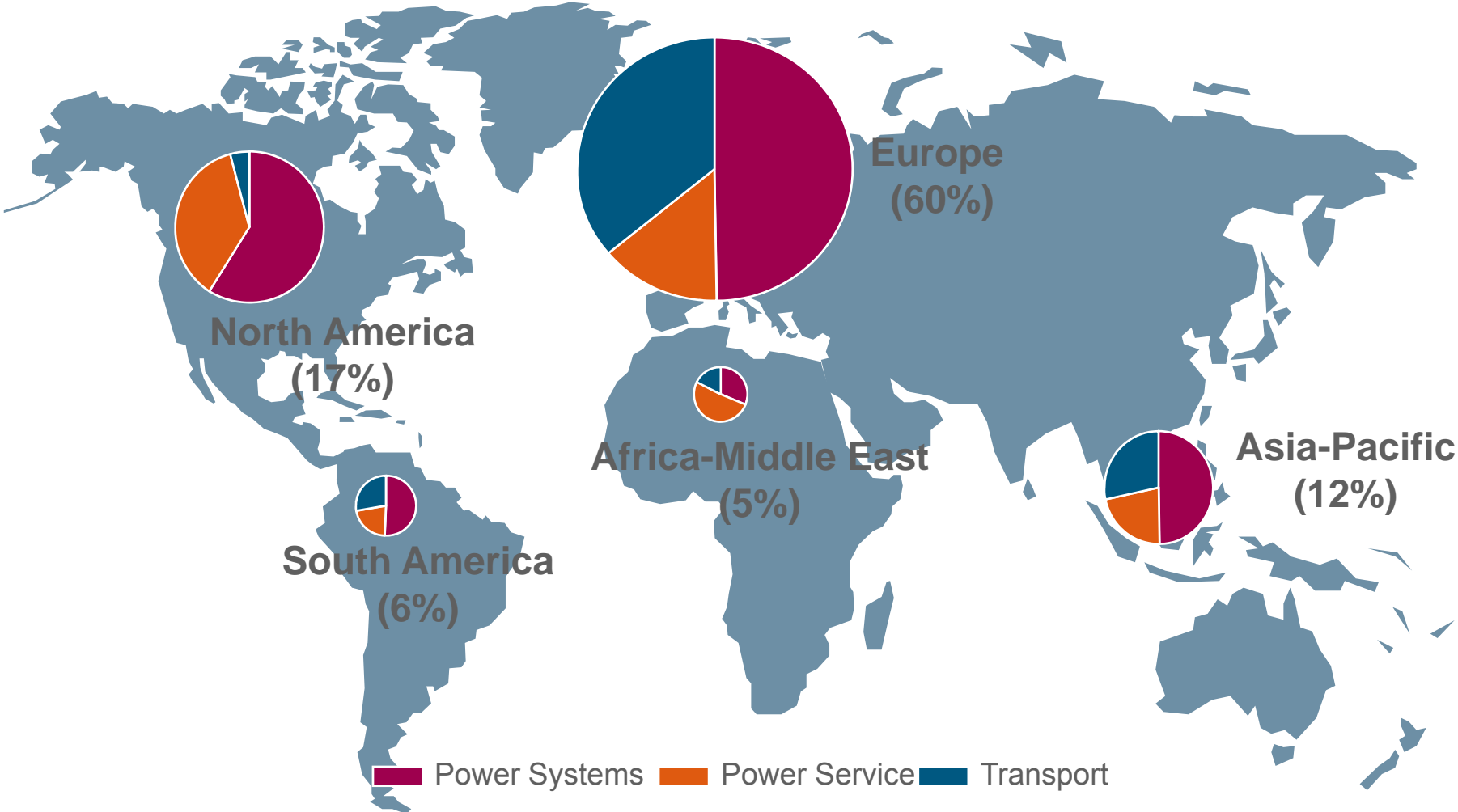
Total orders 2006/07:  
€19 bn

# The Group

## A major international presence



### Orders by region

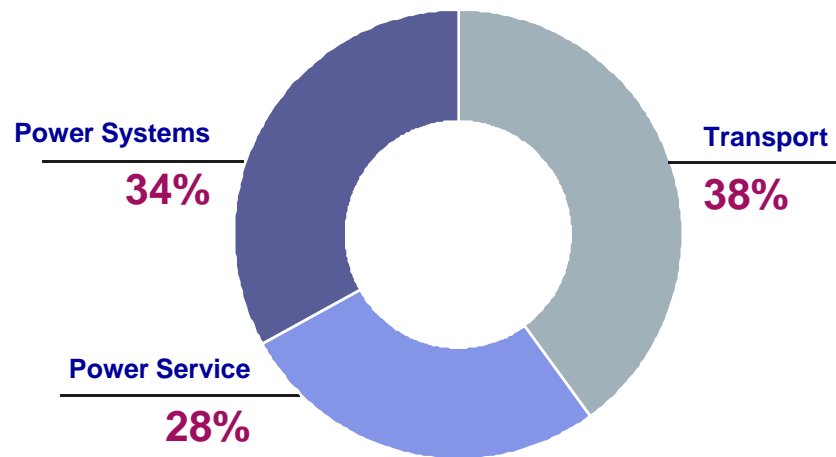


# The Group

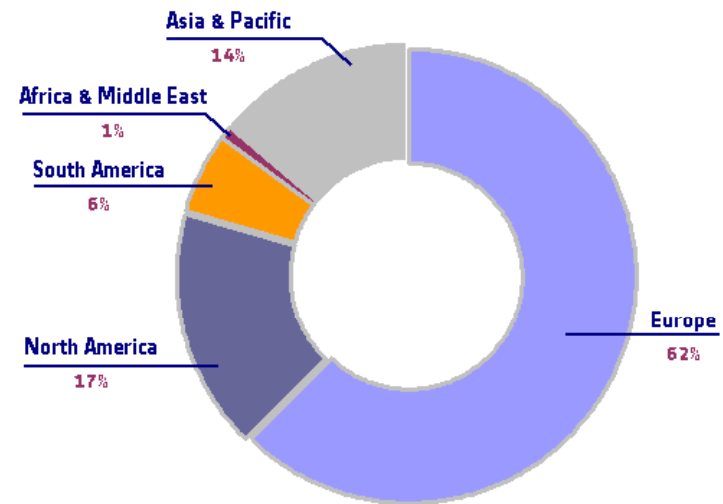
More than 65,000 employees in over 70 countries



## Employees by sector



## Employees by region



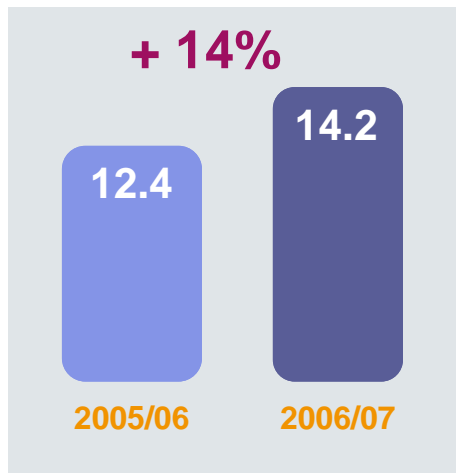
Recruitment of 8,700 employees in 2006/07

# The Group

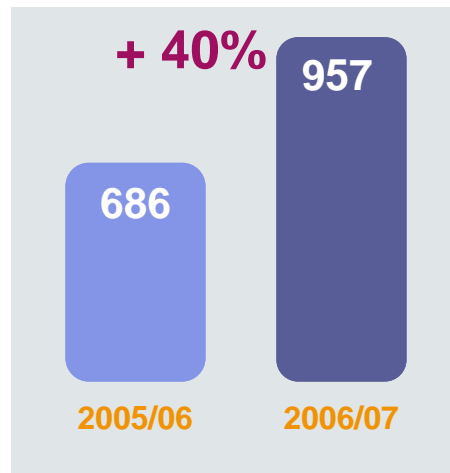
## A healthy financial position



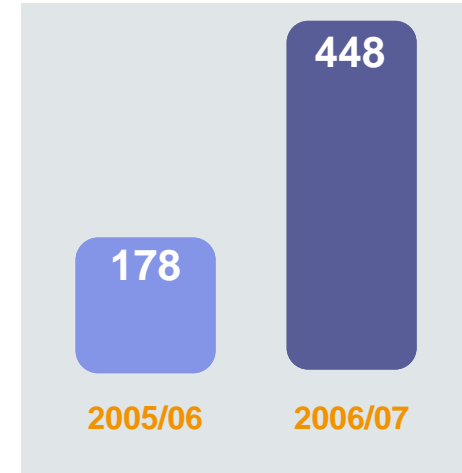
Sales (€ bn)\*



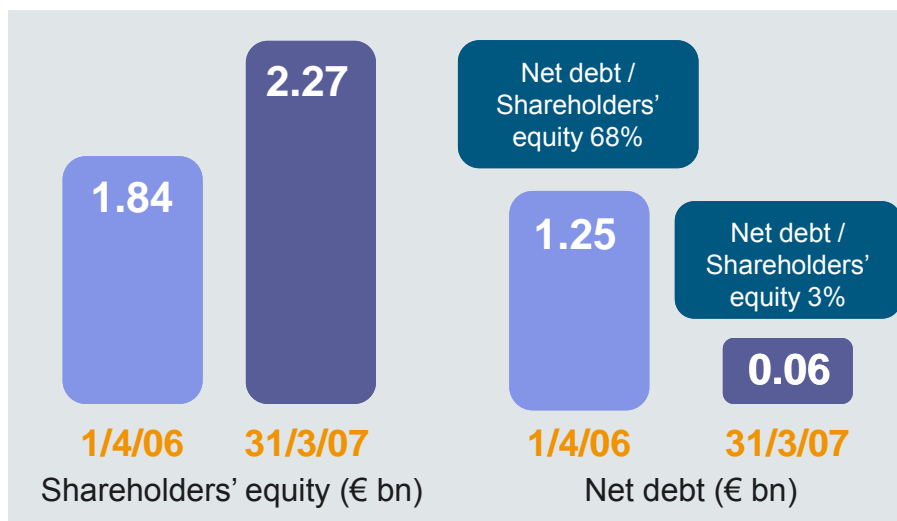
Operating income (€ m)\*



Net income (€ m)



Net debt / Shareholders' equity (€ bn)\*

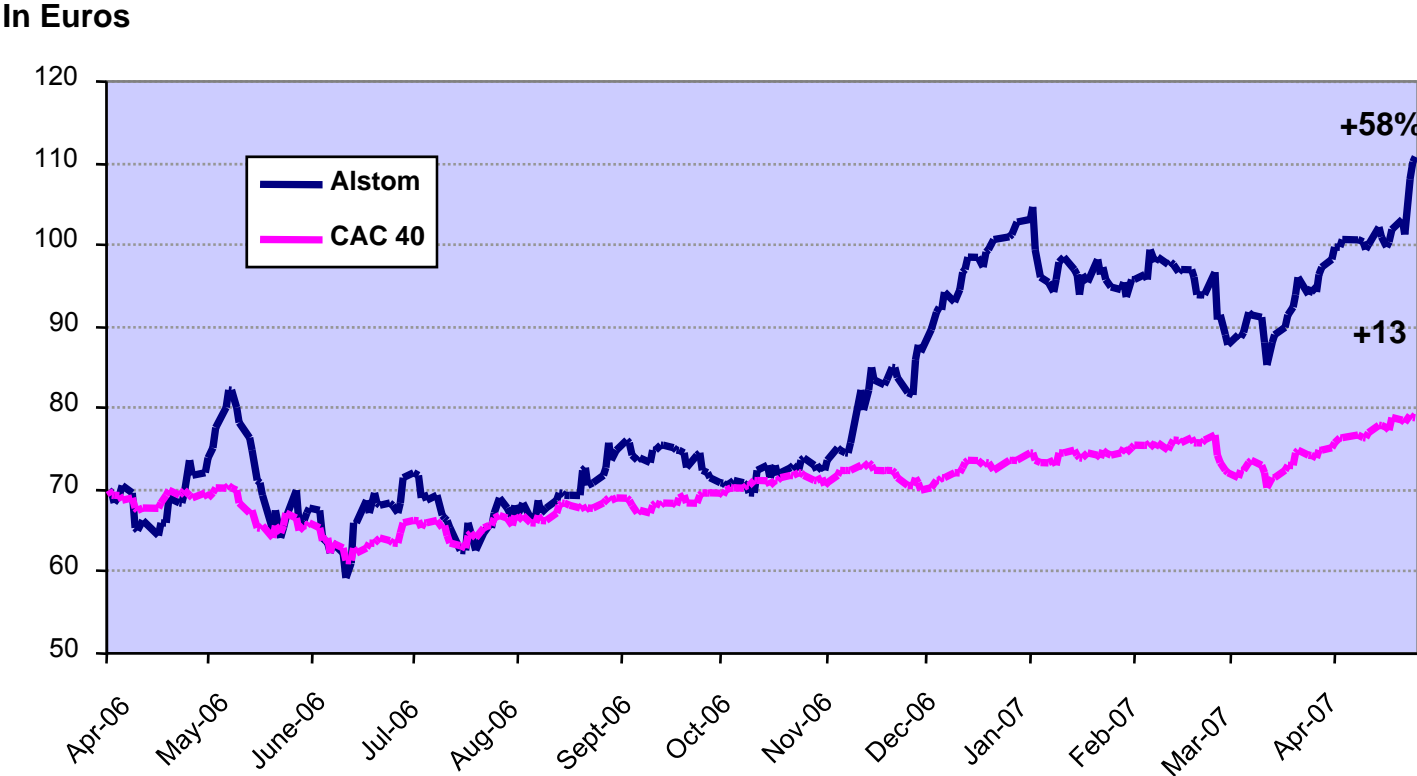


*\*At same perimeter and constant exchange rates*

# The Group

## The second best performance on the CAC 40 **ALSTOM**

Base 100 on 1 April 2006



## Preparation for the future

- **Significant increase in R&D expenditure in 2006/07 (440 million euros, + 26%)**
- **Cutting-edge technological programmes**
  - Power Systems: launch of pilot plants for CO<sub>2</sub> capture,..
  - Power Service: development of robotics
  - Transport: world speed record in rail, AGV, ERTMS,..



## Environment is the main driver for Alstom

- **Clean Power challenge**
- **Environmental benefits of rail transport**

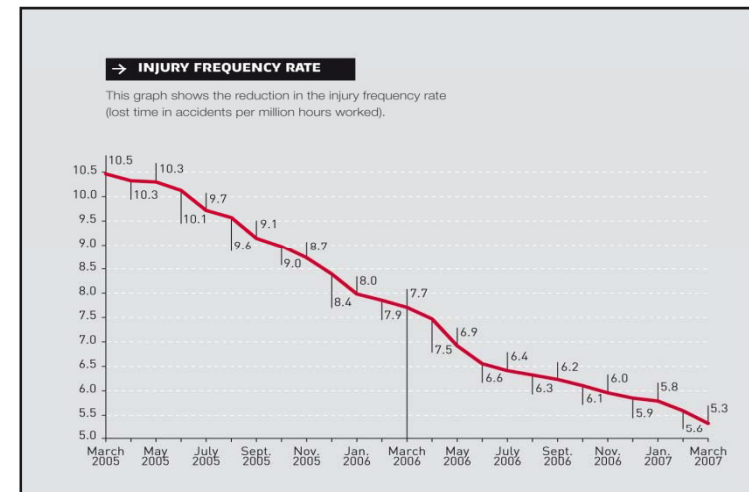


# The Group

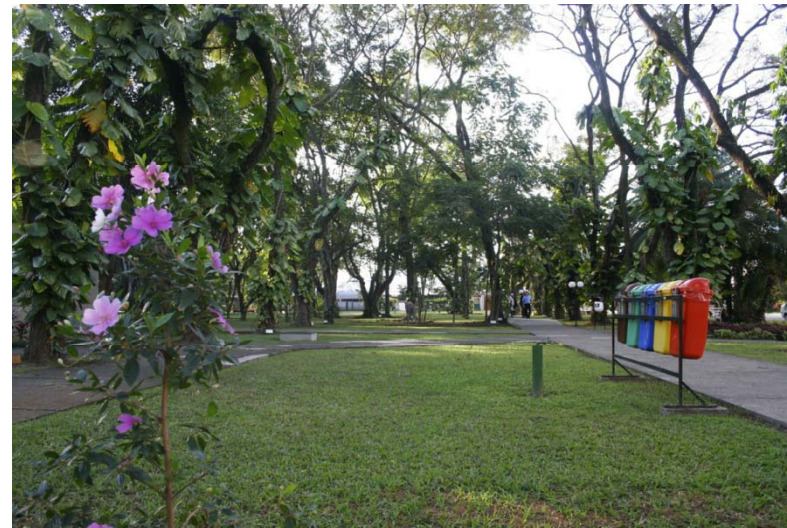
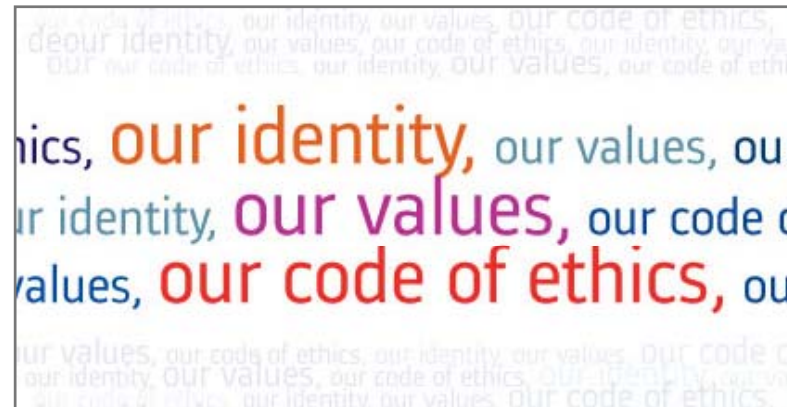
Employees at the core of Alstom's commitments



- Shared Values: Team, Trust, Action
- Safety as a priority
- Large scale human resources policy for recruitment, integration and training (People Quest, Alstom University, Alstom Connection,...)
- Social dialogue



- Strict ethical principles
- Cleaner production of more sustainable products
- Responsible sourcing policy



# POWER

Power Systems  
Power Service

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**ALSTOM**

ALSTOM Today

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# Power Present in all markets



## Technologies adapted to all major energy sources

Gas



Coal



Hydro



Nuclear (conventional part)



Wind



# The most extensive product offering



## Product portfolio compared with competition

	Large GT	Large ST	Boilers	Generators	HRSG	HEX	ECS	Renewable		Nuclear Conv. Island	Plant
								Hydro	Wind		
Alstom	Medium presence	Strong presence	Strong presence	Strong presence	Strong presence	Strong presence	Strong presence	Strong presence	Strong presence	Strong presence	Strong presence
Comp. 1	Strong presence	Medium presence	No presence	Medium presence	No presence	No presence	Medium presence	Medium presence	Strong presence	No presence	No presence
Comp. 2	Strong presence	Strong presence	No presence	Strong presence	No presence	Medium presence	No presence	No presence	Strong presence	Medium presence	Medium presence
Comp. 3	Medium presence	Medium presence	Medium presence	Strong presence	Medium presence	Strong presence	Medium presence	No presence	Strong presence	Medium presence	Strong presence

Strong presence
  Medium presence
  No presence

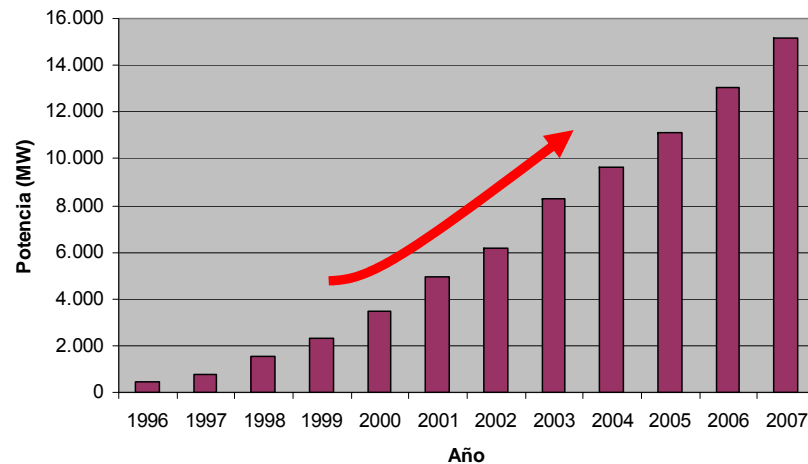
# Alstom and Ecotècnia

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## Mercado Español

1996 - 2007



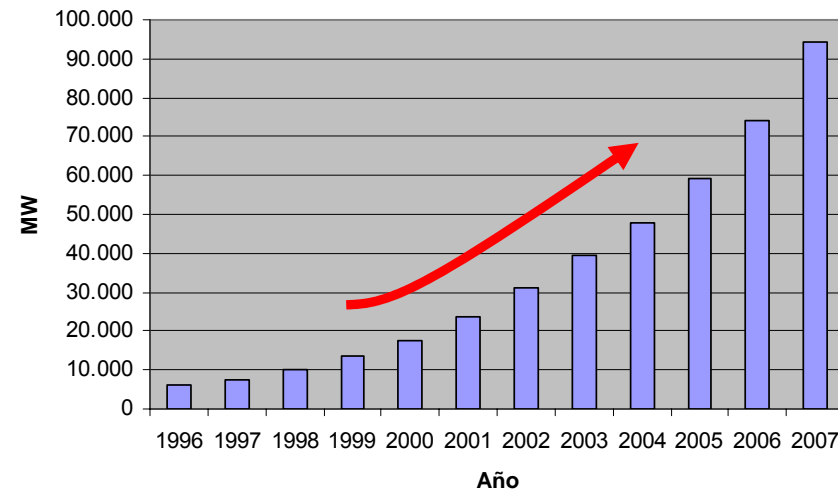
. CAGR = 38 %

Volumen inversión (2.007)

= 2.650.000.000 €/año

## Mercado mundial

1996 - 2007

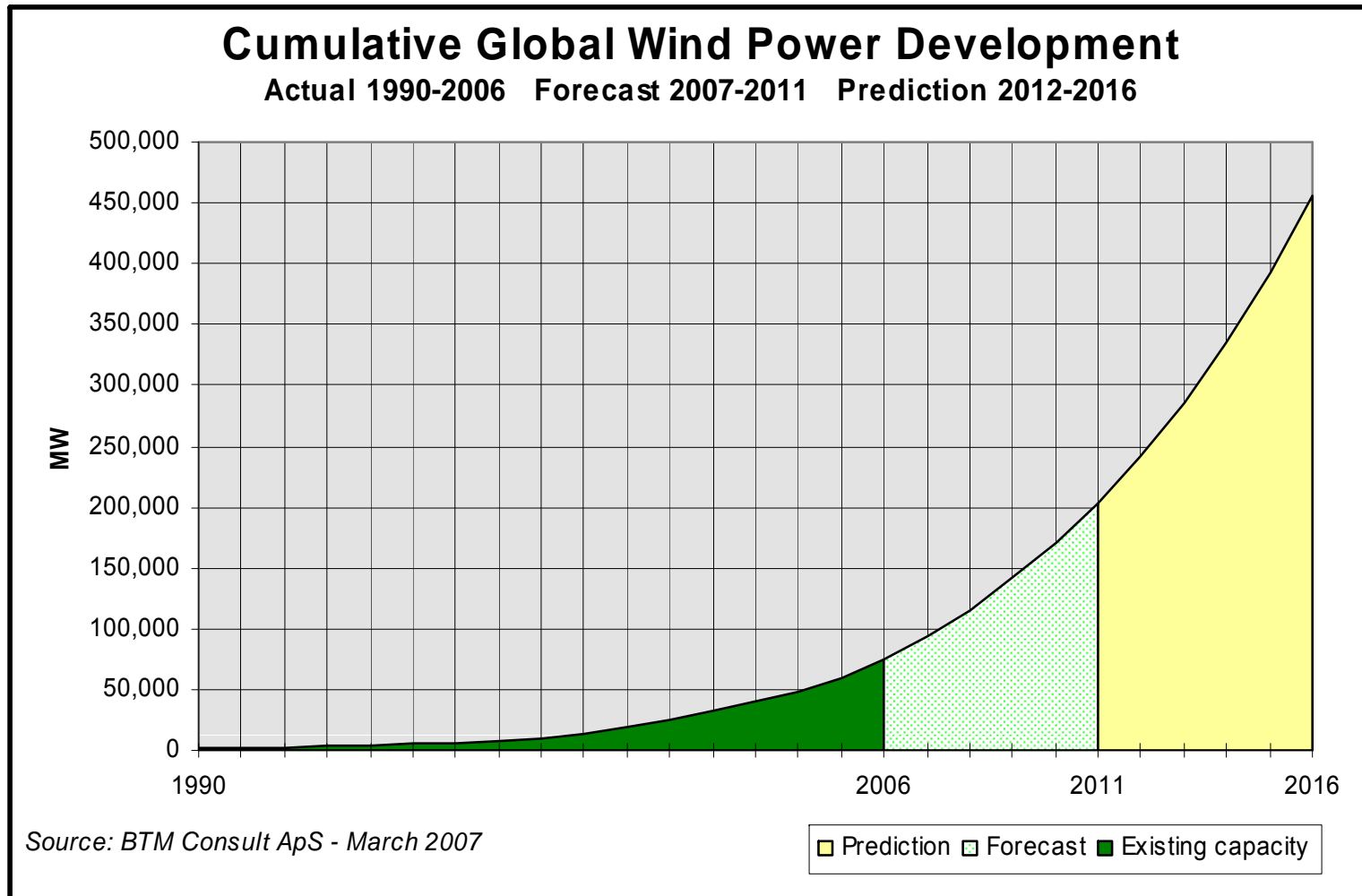


. CAGR = 28 %

Volumen inversión (2.007)

= 25.000.000.000 €/año

Crecimiento sostenido



# Growing Regulatory Support for Renewables **ALSTOM**

## Canada

### 4GW by 2010

- Renewable energy production standards in almost every province

## US

### Obligation to generate min. electricity: Renewable Portfolio Standard in over 20 States

- Tradable RPS: 20% in California (2010) 20% in Nevada (2015) 25% in New York State (2013) 22.5% in New Jersey (2020)
- Federal tax incentive (PTC): \$1.9c/kWh Tax Credit

## Europe

### 20% of primary energy (from < 7% today) - binding target

### Equivalent to 35% of electricity consumption in 2020

- Guaranteed tariffs in 18 countries such as Germany, Spain, France
- Tradable certificates in 6 countries such as the UK or Italy
- National tax incentives schemes

## China

### 15% of primary energy in 2020

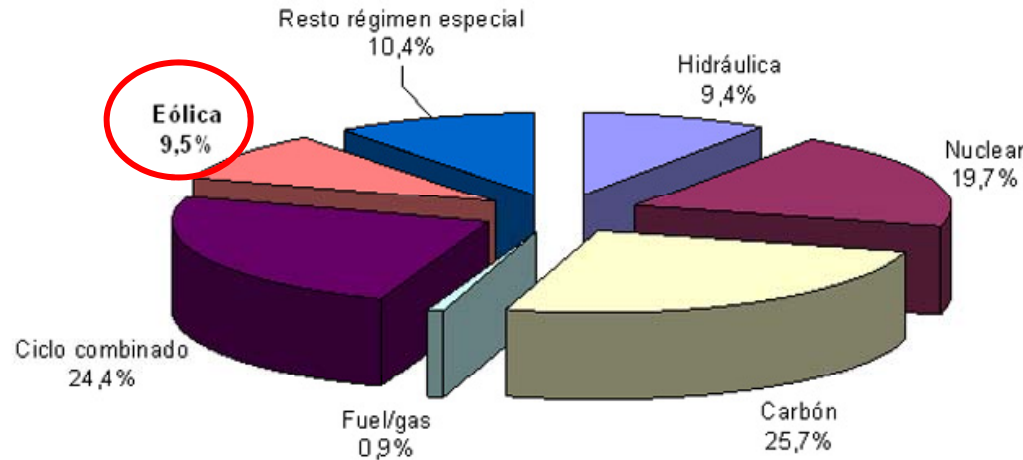
- Guaranteed off take for wind
- Guaranteed tariffs under discussion

## India

### 7 GW by 2012

- State-level program with feed-in tariffs
- Renewable Portfolio Standards

Contribución actual al Mix de generación (2.007) → **9,5 %**



Fuente: REE y elaboración AEE

Objetivos 2.020:

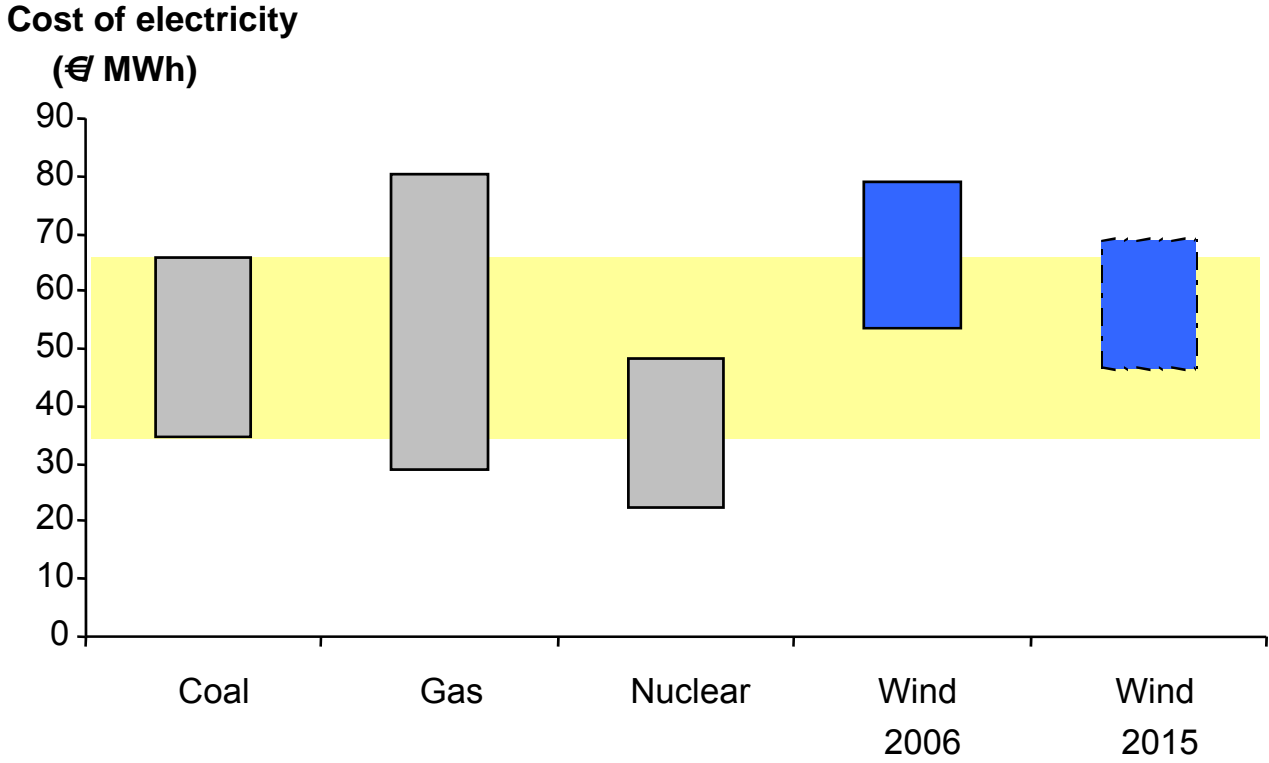
Contribución al Mix = **20 %**

Potencia instalada → **40.000 MW**

Inversión asociada 2.008 - 2.020 → **33.500.000.000 €**

Directiva Europea de Renovables: 20-20-20 en 2.020

# Wind can already be cost competitive



Source: Alstom analysis, Windpower Monthly 2007

## Main figures. Wind turbines installed since 1984

77 units	⇒	150kW - ECOTECNIA 20	⇒	12 MW
145 units	⇒	225kW - ECOTECNIA 28	⇒	33 MW
182 units	⇒	640kW - ECOTECNIA 44	⇒	115 MW
450 units	⇒	750kW - ECOTECNIA 48	⇒	333 MW
13 units	⇒	1.250kW - ECOTECNIA 62	⇒	17 MW
431 units	⇒	1.670kW - ECOTECNIA 74	⇒	720 MW
187 units	⇒	1.670kW - ECOTECNIA 80	⇒	312 MW
1 unit	⇒	2.000kW - ECOTECNIA 80	⇒	2 MW

**Total 1,486 wind turbines installed**

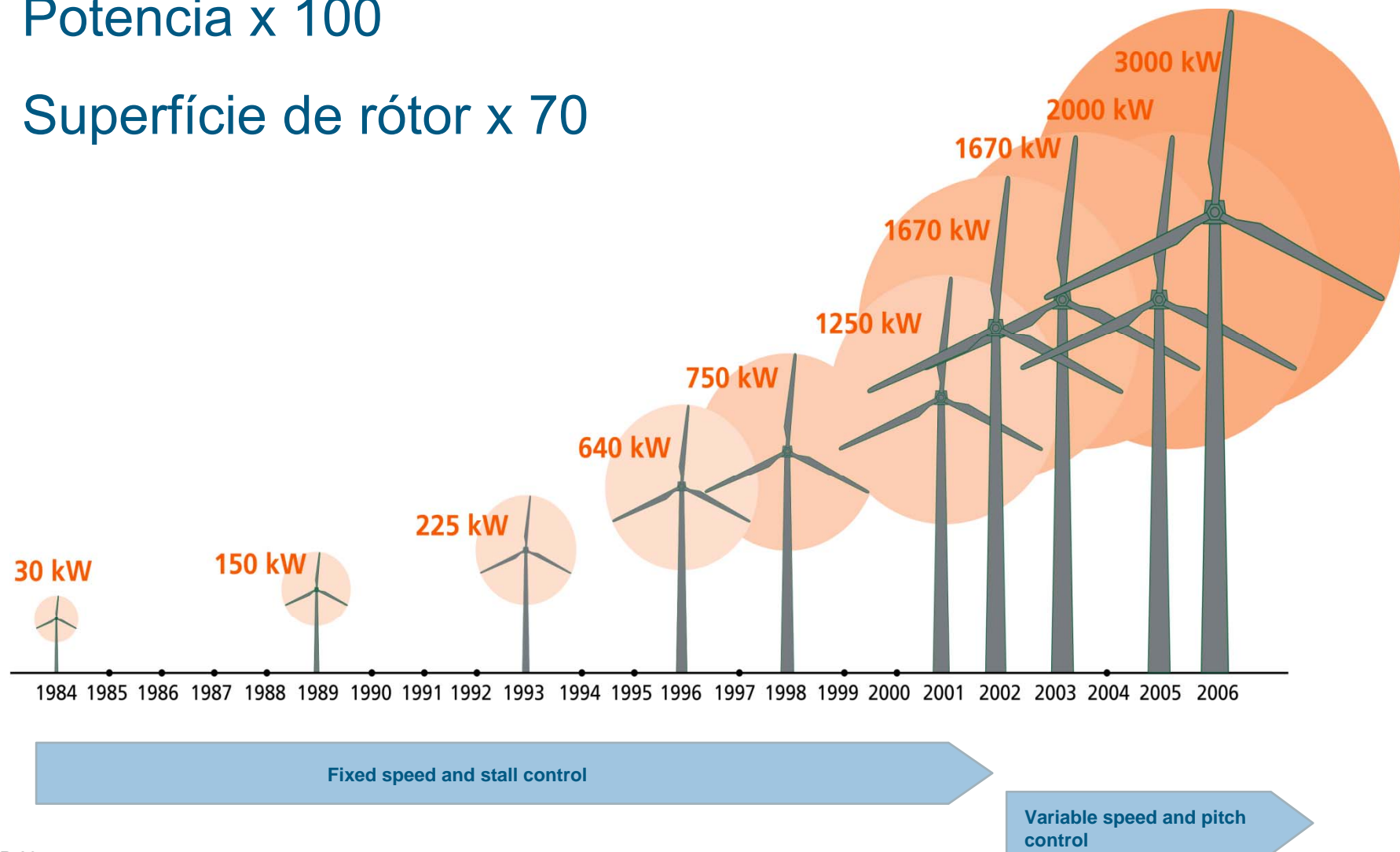
**1,543 MW**

**Total 184 wind turbines under construction and 321 MW**

# Evolución tecnológica

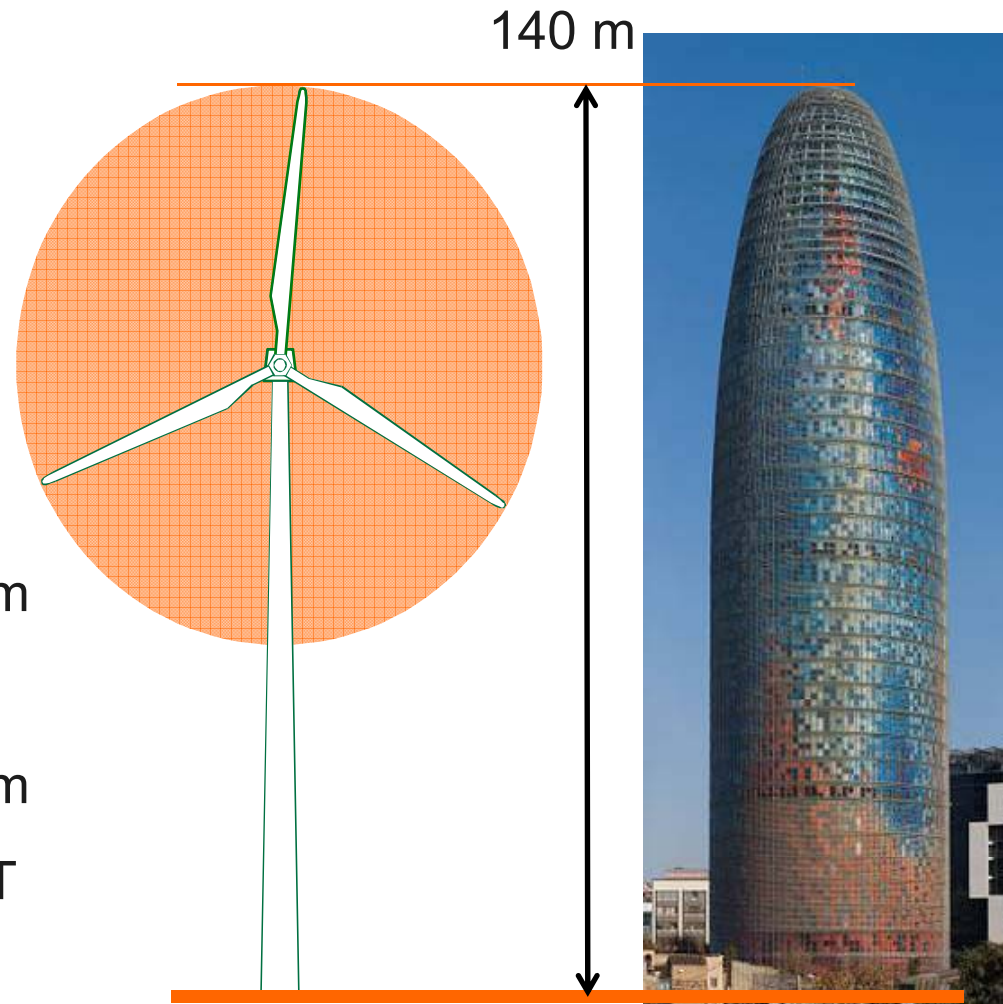
Potencia x 100

Superficie de rotor x 70



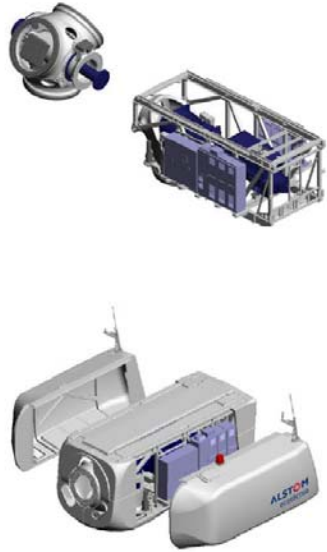
## ECOTECHNIA 100 / 3MW

DIÁMETRO ROTOR	100 m
TORRE	90 m
ALTURA CON PALA	140 m
PESO	500 T
Ø CIMENTACIÓN	18 m

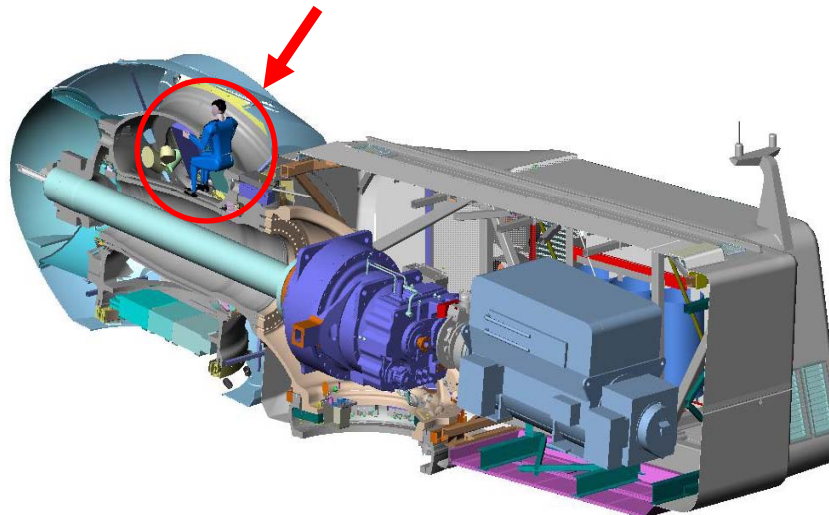
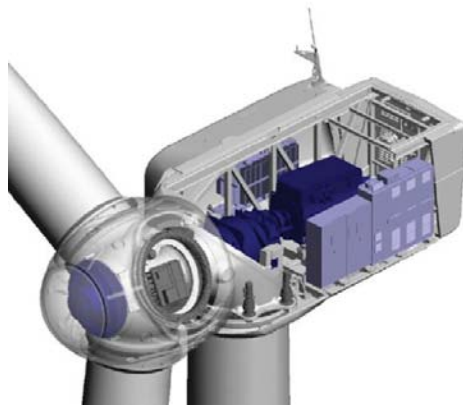
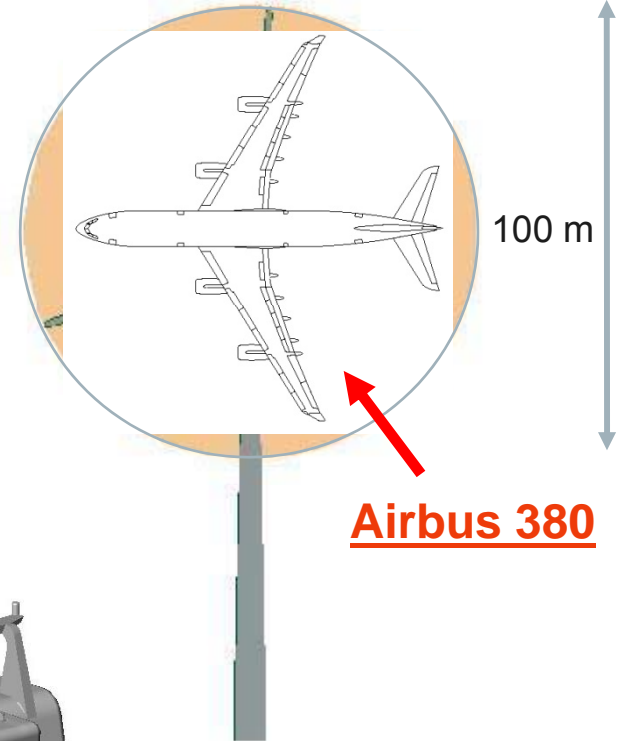


# ECO 100: Magnitudes

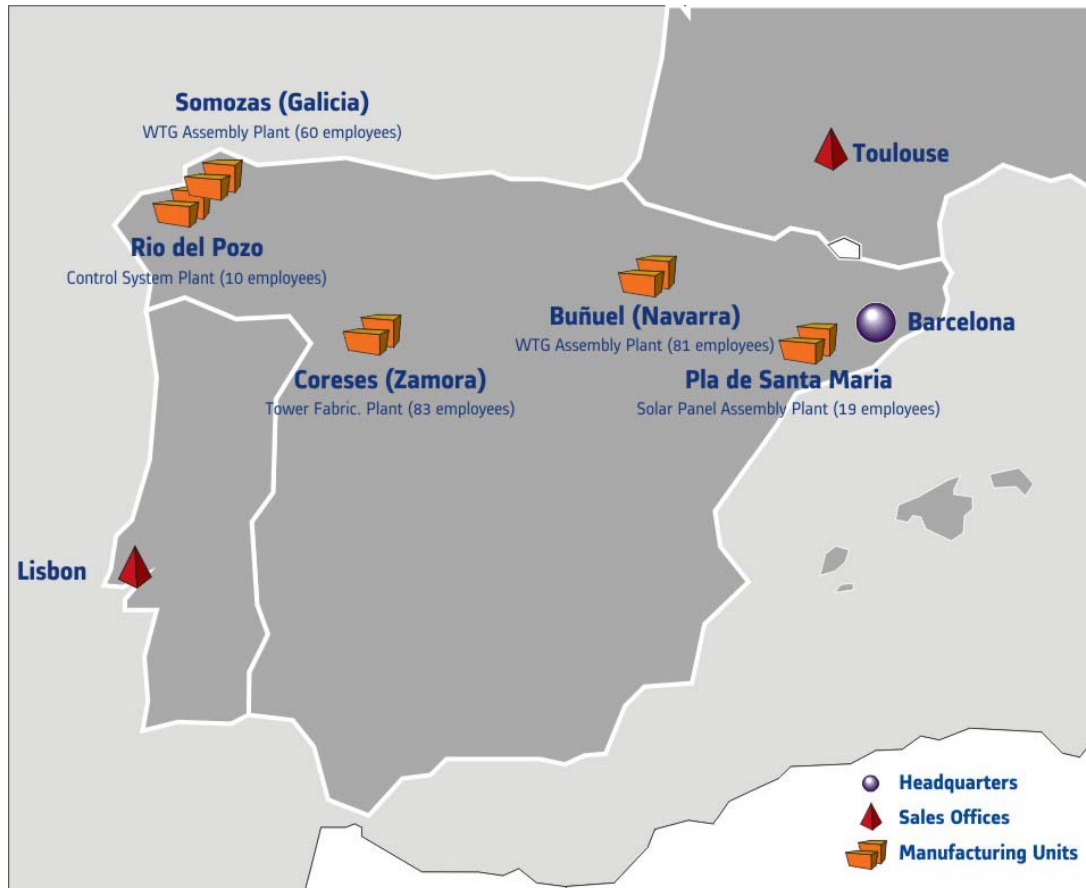
ALSTOM



Ecotècnia 100



# Current Footprint



## Alstom Wind

- ~ €400M sales in '07 (350MW, 220 units)

- 50% Spain, rest in Southern Europe
- 90% Wind (WTG & O&M & Devel.)
- 10% Solar PV

- nearly 850 people as of December '07

- Closing: 31<sup>st</sup> October '07

- 5 factories in Spain:

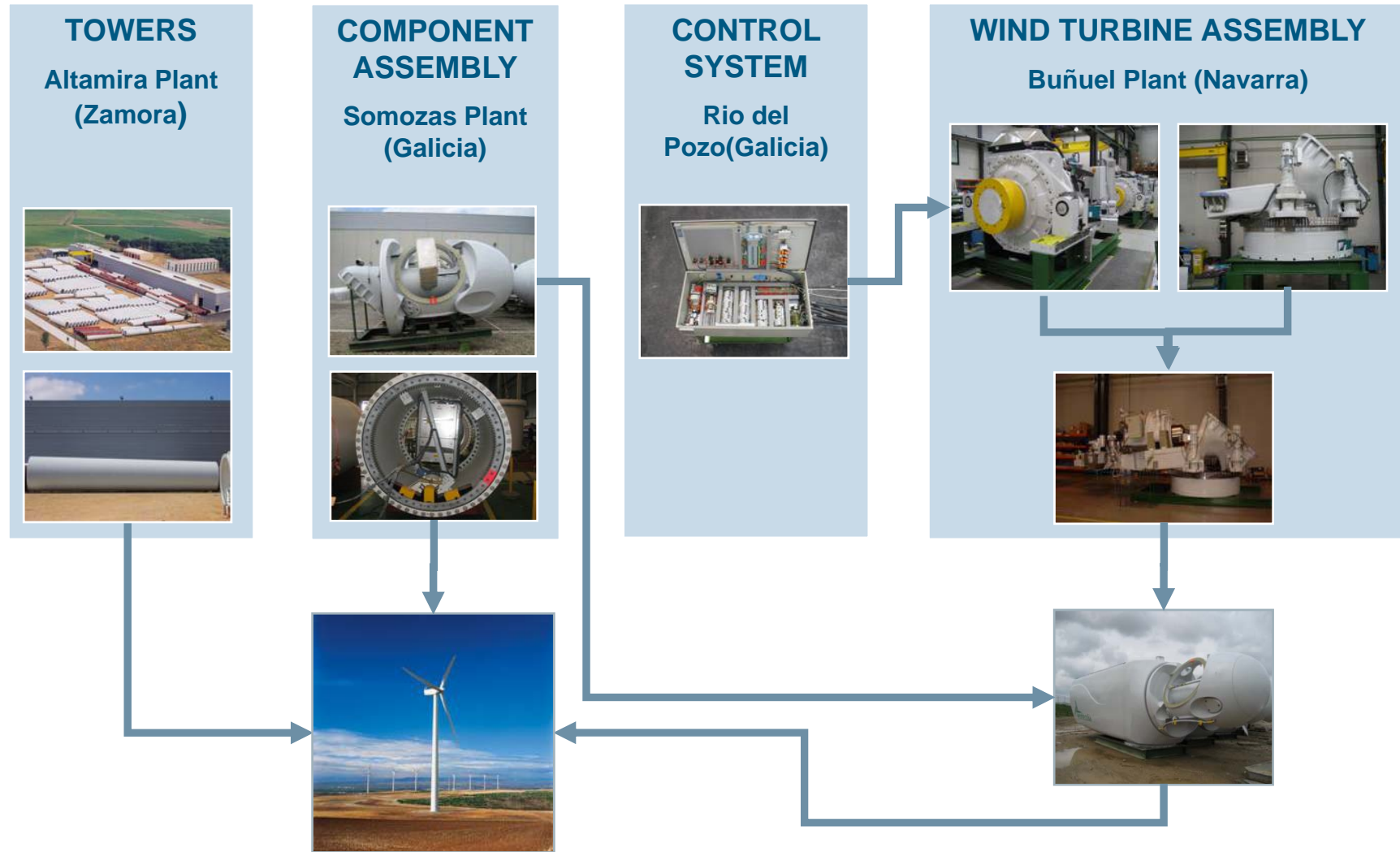
- Assembly WTG: Buñuel, Somozas
- Ctrl Panel Assembly: Rio del Pozo
- Tower Manufacturing: Coreses
- Solar Panels: Pla de Santa Maria

- Sales offices in France, Italy and Portugal

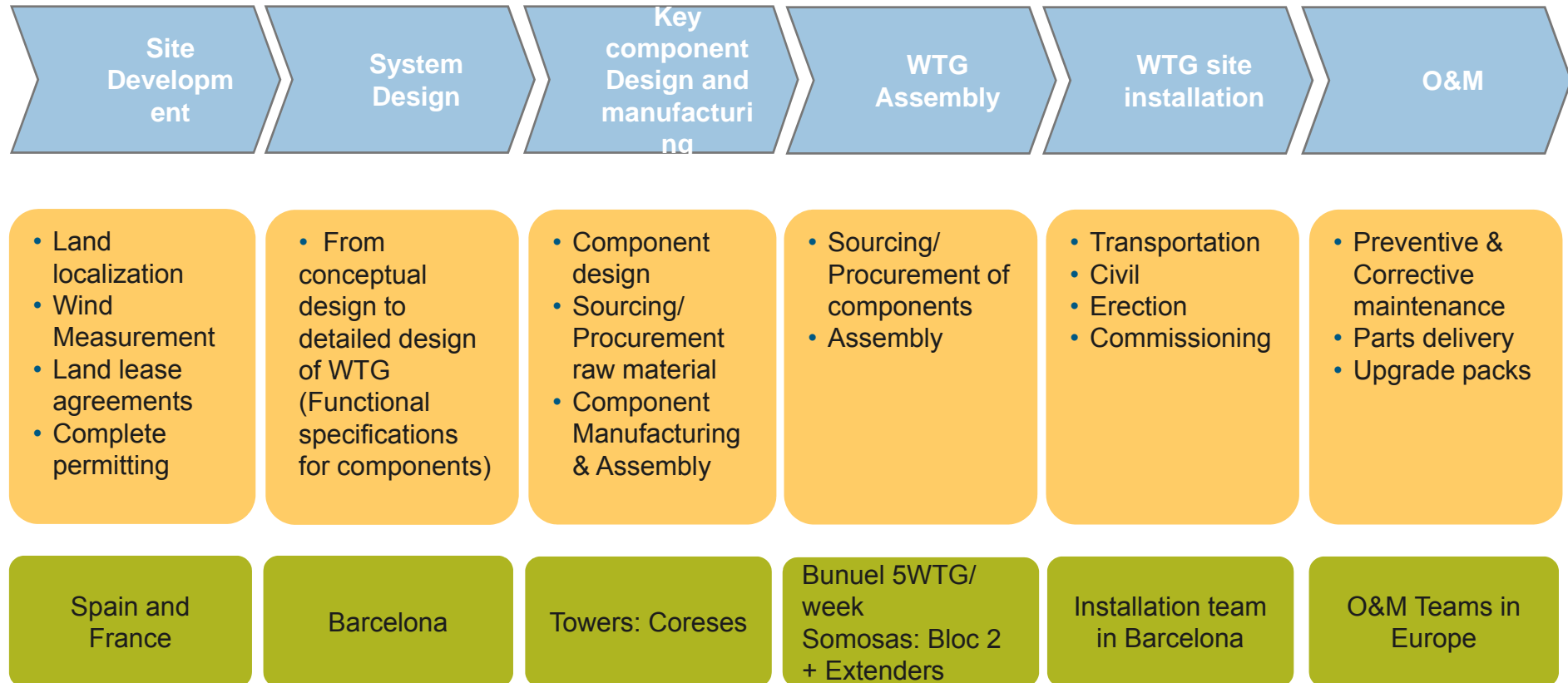
- Sourcing: Spain & Germany

Ready to grow within Alstom

# Current Footprint Illustration



# Expertise across the Entire Value Chain



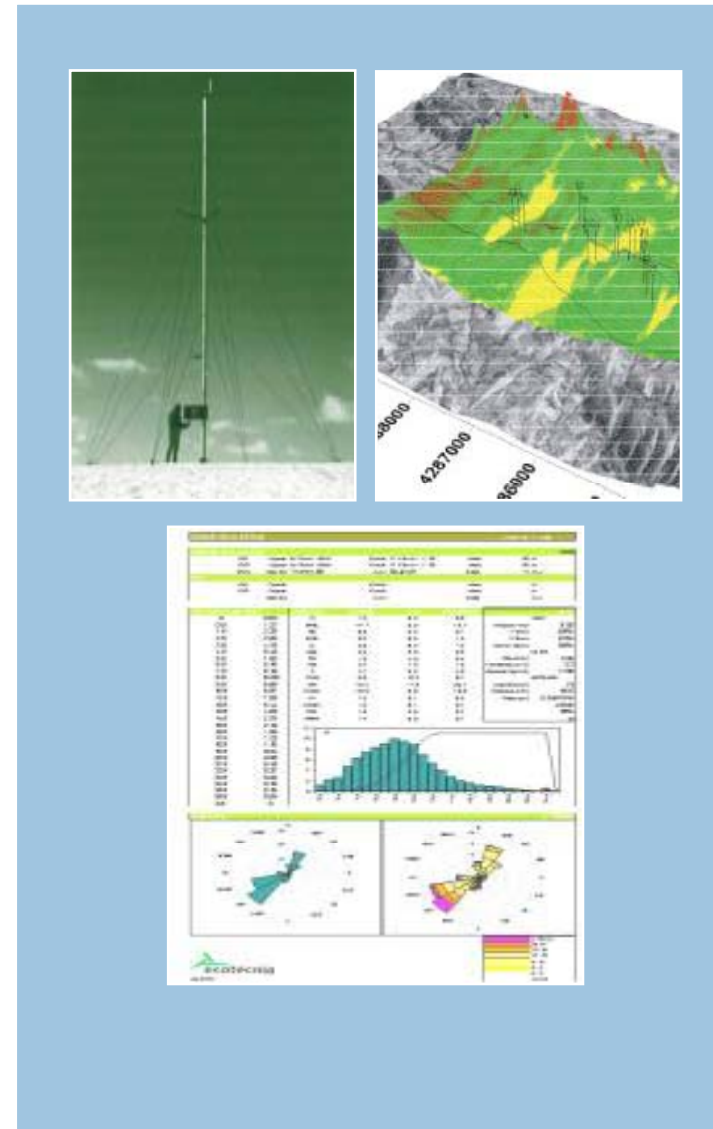
## Current Business:

- Annual sales: 10-20M€
- Offering:
  - O&M Contracts during warranty period
  - Extensions beyond warranty period
- Team of 183 people in Spain and France
- Ensures highest reliability to customer



## Current Business:

- Annual Sales: 5-20M€
- Offering:
  - Site identification and assessment
  - Grid connection permits
  - Complete Permitting
- Team of 20 people in France and Spain
- New Product Introduction accelerator



## Current Business:

- Sales: ~40M€ in Spain
- Offering:
  - Assembly of solar modules (manufactured by Solon)
  - Trackers and roof mounted panels
  - Off-grid hybrid systems for rural remote electrification
  - Ciclops: electronic equipment (chargers & inverters)
  - Turnkey solar farm – 0.5 to 10MW
  - O&M for solar farms
- Team of 54 people in Spain



## 2003 - Ecotècnia headquarters in Barcelona



[www.alstom.com](http://www.alstom.com)

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