Spain: Global Platform
for International Business and Investment

Projects Management Division
December 2014

I. ICEX- INVEST IN SPAIN – Objective and Activities

II. International Position of Spain – Foreign Investment in Strategic Industrial Sectors

III. Promotion of Spain as destination for Advanced manufacturing- and Innovative Projects

Who is…

ICEX- INVEST IN SPAIN is the Directorate in charge of attracting foreign investment inhoused in ICEX-Spain Trade & Investment.

Depending of the Secretary of State for Trade (Ministry of Economy and Competitiveness).

Mission

- To promote, attract and maintain foreign investment in Spain
- To be the benchmark for foreign investors and the meeting point between companies/Sectors and institutions in the State, Regional and Local level

Objectives

- Attracting new projects of foreign investment by focusing on countries, sectors and businesses that involve greater growth potential for Spain
- Promoting a business climate and facilitating doing business in Spain
- Transmitting an image of Spain as an internationalized country associated with highly competitive human and technological resources

1.- Information and Advice

- Personalized advisory service. Customized reports

  Sectoral Information – Analysis of the sector, capacities, international position, workforce, operative Costs.

  Grants and subsidies applicable to investment projects-all levels of administration.

  Administrative procedures on all stages of the investment process.

  Inmmigration Service advice -quickest way to obtain the permits for investors and highly qualified employees, technical staff, scientists.

  Specialized publications: Sector guides, tax, immigration and legal briefs.

2.- Support and Management

Assistance the establishment of foreign companies in Spain:

- Finding the best location for each project throughout Spain
- Organization and co-ordination agenda: meetings and visits to of companies and institutions throughout Spain, as well as with the regional and local governments concerned
- Identification of the strategic & technology partners for each project

3.- Business climate

Defense the collective needs & interests of foreign-owned companies

- Analysis of the business climate.
  - International Reports of reference:
    - * World Competitiveness Yearbook (IMD-Lausana)
    - * The Global Competitiveness Report . WEF (Ginebra)
    - *Doing Business BM- (Washington)
  - Individual interviews eventual projects, focus-groups, Foreign chambers of commerce, associations.
- Legislative and administrative proposals.
- Periodical publications on topics of interest to investors

4.- Promotional Activities

HOW DO WE ENGAGE WITH COMPANIES?

Investors

Potential Investment Project

GETTING BUSINESS

PROACTIVE

- Conferences
- Events
- Fairs
- Technology Fund
- Marketing / Media
- Multipliers
- Embassies/Commercial Offices
- Personal Contacts
- Public Administrations/Entities.
- Industrial-Technological-Research Key Agents

REACTIVE

- Direct Contact

INFORMATION DEMANDS

CHANNEL

- External Network
- Embassies/ Commercial Offices
- Web
- E-mail
- Phone
- Personal Contact

INVEST IN SPAIN

INFORMATION MANAGEMENT SYSTEM

Not our business

- Non-relevant information demands

Level 0: General Info

- Standard answers, contact facilitation, regions

Level 1: Specialized demands

- Assigned to an specialized agent or investor services manager (strategic sectors)

Level 2: Investment Project

- Assigned to an investor services manager

Coordinator

Invest in Spain Activity 2014 (as for 30/11)

- **1,519** **New Queries** **from** Potential Investors

- **141** **New Projects**

  Projects by Country of Origin

  Geographic Zones

  Europe : 77 **(54,6%)** **Asia:** 30 **(21,3%)** **America:** 28 (**19,9%)**

  África : 3 (2,1%) **Oceania:** 3 (2,1%)

  Countries

  Europe : UK 11 ; **France: 8 Italy 6 Germany 4 -**

  America EEUU- 20

  Asia: **China 11; Corea 5**

- **775** **Projects in Portfolio. Current pipeline of projects**

Invest in Spain Activity 2014 (as for 30/11)

- **141 New Projects . Breakdown by Sector**
  - ✓ Industrial Products Manufacturing: 24 projects (17%)
  - ✓ ICT : 22 projects (15%)
  - ✓ Biotechnology, Pharma and Life Sciences 12 projects: (8,5%)
  - ✓ Automotive 8 projects (5.7%)
  - ✓ Aeronautics 6 projects (4.3%)
  - ✓ Renewables and Green Technologies : 12 (8,5%)
  - ✓ Natural Resources 3 projects (2.13%)
  - ✓ Agro-food 5 (3.55%)
  - ✓ Tourism and Leisure 5 Projects (3.5%)
  - ✓ Logistics/Transport 4 Projects (2.8%)
  - ✓ Real Estate 11 (7.8%)
  - ✓ Financing and Multisectoral 5 (3.5%)

Invest in Spain Activity 2014 (as for 30/11)

- **189 Promotional Activities in 46 countries:**

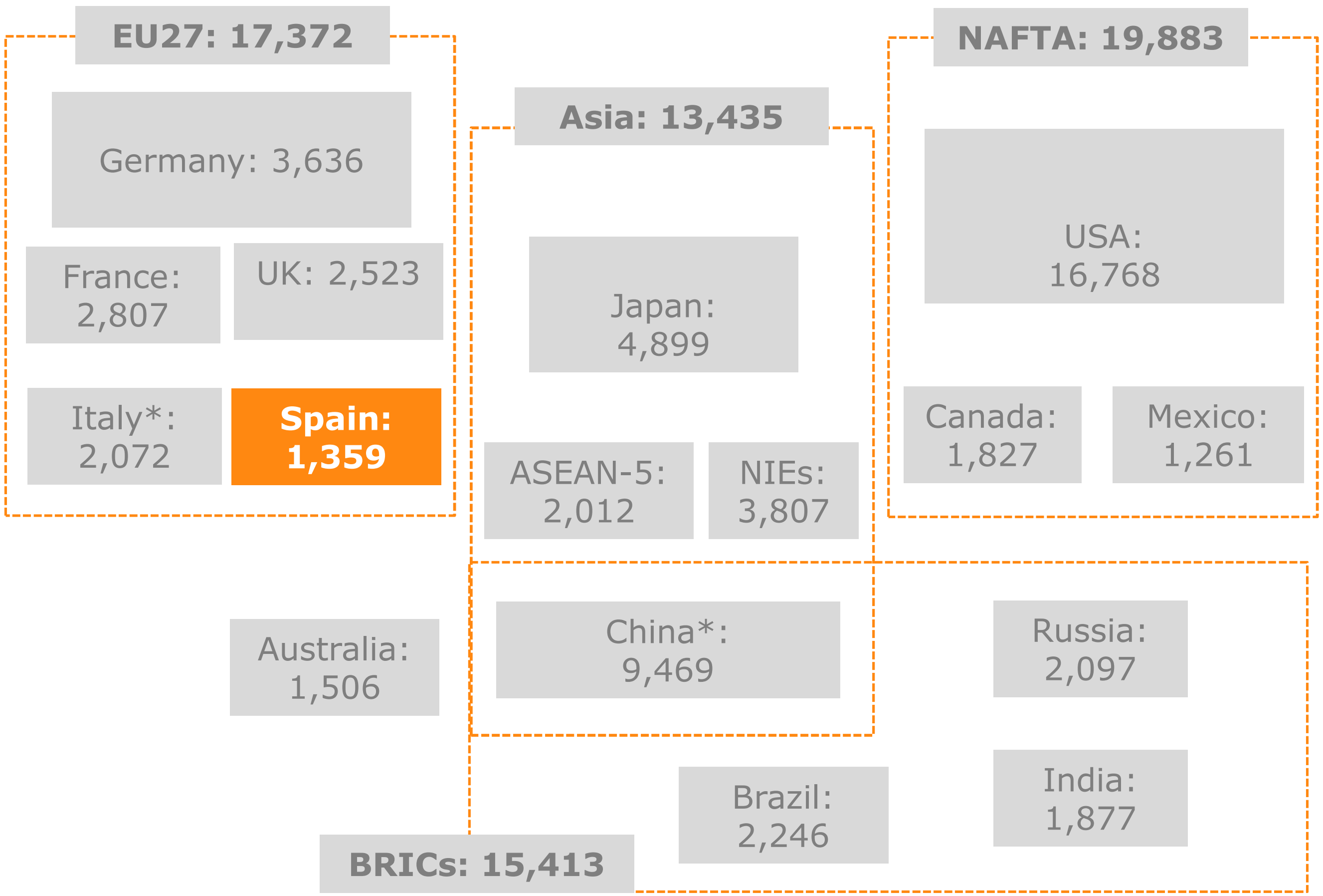
  - **Investment workshops and Institutional Forums .**
  - **Sectoral Congresses and Trade Shows.**

- **Priority Countries :**

  - **EEUU, Canadá, China, Germany, UK, France, Norway, Sweden, Russia, Japan.**
  - **Latam : Mexico, Argentina, Brasil, Venezuela, Chile, Perú…**

Spain is the world's 13th-largest Industrial economy and the 5th-largest economy in the EU: GDP worth 1.4 trillion USD

GDP comparison of major economic regions, USD billions



Source: IMF, 2014. Data Referred to 2013
**Estimated*

Spain is the 11th-largest economy in terms of accumulated inward and outward FDI stock in the world.

Inward FDI stock, USD Millions

	Economy	Inward FDI stock 2013 Mill USD	Share
1	United States	4,935,167	19.4%
2	United Kingdom	1,605,522	6.3%
3	Hong Kong, China	1,443,947	5.7%
4	France	1,081,497	4.2%
5	China	956,793	3.8%
6	Belgium	924,020	3.6%
7	Germany	851,512	3.3%
8	Singapore	837,652	3.3%
9	Switzerland	747,436	2.9%
10	Brazil	724,644	2.8%
11	Spain	715,994	2.8%
12	Netherlands	670,115	2.6%
13	Canada	644,977	2.5%
14	Australia	591,568	2.3%
15	Russian Federation	575,658	2.3%
16	British Virgin Islands	459,342	1.8%
17	Italy	403,747	1.6%
18	Mexico	389,083	1.5%
19	Sweden	378,107	1.5%
20	Ireland	377,696	1.5%
	World	25,464,173	100%

Source: UNCTAD, WIR, 2014.

Outward FDI stock, USD Millions

	Economy	Outward FDI stock 2013 Mill USD	Share
1	United States	6,349,512	24.1%
2	United Kingdom	1,884,819	7.2%
3	Germany	1,710,298	6.5%
4	France	1,637,143	6.2%
5	Hong Kong, China	1,352,353	5.1%
6	Switzerland	1,259,369	4.8%
7	Netherlands	1,071,819	4.1%
8	Belgium	1,009,000	3.8%
9	Japan	992,901	3.8%
10	Canada	732,417	2.8%
11	Spain	643,226	2.4%
12	China	613,585	2.3%
13	Italy	598,357	2.3%
14	British Virgin Islands	523,287	2.0%
15	Ireland	502,880	1.9%
16	Russian Federation	501,202	1.9%
17	Singapore	497,880	1.9%
18	Australia	471,804	1.8%
19	Sweden	435,964	1.7%
20	Brazil	293,277	1.1%
	World	26,312,635	100%

Source: UNCTAD, WIR, 2014.

- **US, UK, German, French and Italian Companies** are the largest investors in Spain.
- **Increasing interest from companies in Asia** (especially from China, India, Korea and Japan) **Latin America** (especially from Mexico and Brazil) and from **the Middle East Countries.**
- **37%** of the FDI allocated in Industrial Sectors:
- **1.,239,728 jobs** depending of FDI in the Country
- Main Industrial Sectors:

Automotive, Chemical Industry, Bio-Pharma, Aeronautics, ICT.

Spain: Inward FDI by country Stock : EUR Millions

	COUNTRY	STOCK 2012	% total 2012
1	USA	57,308.5	15.9%
2	ITALY	48,605.8	13.4%
3	FRANCE	37,124.3	10.3%
4	UK	35,455.4	9.8%
5	GERMANY	28,973.0	8.0%
6	MEXICO	19,465.1	5.4%
7	LUXEMBOURG	19,241.3	5.3%
8	PORTUGAL	18,749.6	5.2%
9	SPAIN	18,234.9	5.0%
10	NETHERLANDS	14,740.0	4.1%
11	SWITZERLAND	10,580.9	2.9%
12	BRAZIL	8,812.9	2.4%
13	UAE	5,445.3	1.5%
14	SWEDEN	4,999.4	1.4%
15	CANADA	3,778.5	1.0%
16	JAPAN	3,613.5	1.0%
17	BELGIC	2,771.0	0.8%
18	COLOMBIA	2,765.6	0.8%
19	URUGUAY	2,456.7	0.7%
20	ISRAEL	1,260.5	0.3%
21	IRELAND	1,172.3	0.3%
22	AUSTRIA	1,004.4	0.3%
23	ARGENTINA	980.0	0.3%
24	DENMARK	921.9	0.3%
25	NETHERLANDS ANTILLES	859.6	0.2%
	OTHER	12,229.6	3.4%
	TOTAL	**361,550**	**100.0%**

Source: Registro de Inversiones, 2014. Data Referred to 2012

Spain: a highly internationalized economy/ Foreign Investment in Strategic Sectors

- **Over 12,800 foreign companies are currently located in Spain across all economic sectors**
- **70 of the FORBES Top 100 companies have branches in Spain**
- **9** out of **10 of** Thomson Reuters **Top 100** Global Innovators are established in the country

1. Spain: a highly internationalized economy

- Spain is the **7th-largest exporter of commercial services worldwide (**has gone up one position in the ranking)**, 4th in the EU, and the <u>18th-ranked exporter of merchandise trade</u> (up from position 20 last year).**

- **Multinational Companies are responsible of 40% of Spain's External Sales.**

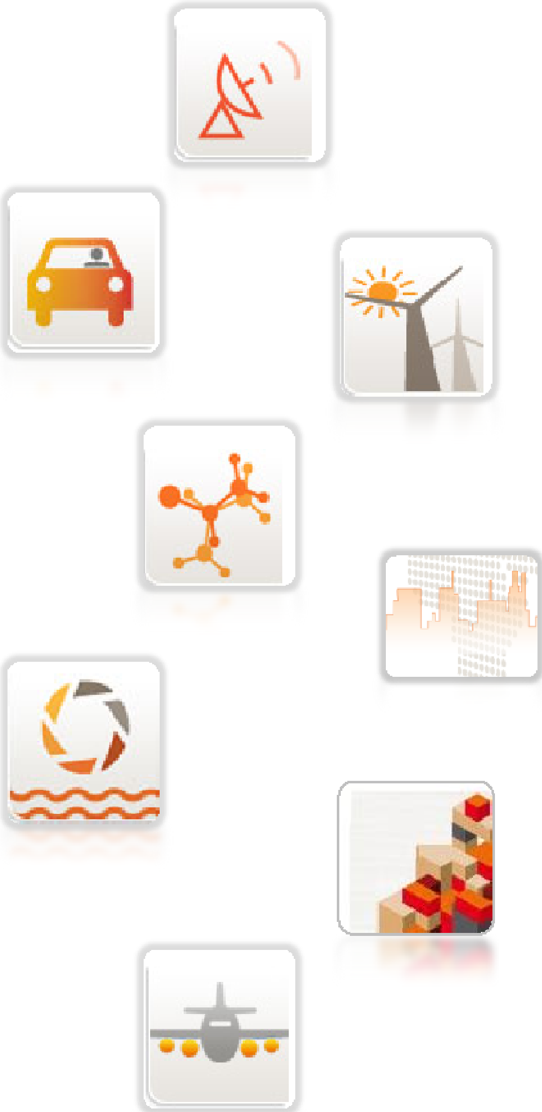
Commercial Services Exports
USD Millions

		2013	2013/2012%
1	United States	662,111	5.0%
2	United Kingdom	289,970	0.6%
3	Germany	286,823	8.0%
4	France	233,288	8.3%
5	China	207,018	8.7%
6	India	152,587	4.8%
7	Spain	144,452	5.5%
8	Japan	143,890	1.0%
9	Netherlands	142,006	8.3%
10	Hong Kong	135,024	7.1%
	World	4,623,710	5.5%

Merchandise Trade Exports
USD Millions

		2013	2013/2012 %
1	China	2,209,626	0.0%
2	United States	1,578,972	2.2%
3	Germany	1,452,795	3.4%
4	Japan	715,097	-10.5%
5	Netherlands	663,524	1.5%
6	France	579,647	1.9%
7	Republic of Korea	559,632	2.1%
8	United Kingdom	541,348	14.5%
9	Hong Kong	535,546	8.7%
10	Russian Federation	523,327	-1.1%
	….	…	…
18	Spain	315,518	6.9%
	World	18,784,000	2.1%

Competitive Spanish Industrial Sectors- with high foreign Investment- Main Exporters – High Investment in R&d&i



- Automotive
- Chemical Industry
- Biotechnology, Pharmacy and Life Sciences
- Aerospace
- ICT (Information and Communication Technologies
- Agro-food
- Energy .

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Objective

To Attract New Investment of Multinational Companies for R&D&I Projects in Strategic Industrial Sectors in wich Spain has a competitive position :

- R&D Investment in **Spain** was **13,392 Million € in 2012 (1.30%/GDP- EU average 2.02%)**
- **Low rate of Private Investment in Innovation in Spain: 7,094 Million € in 2012 (0.68% /GDP – 1.31%/GDP average of EU)**
- **Germany Private Sector Invested 49,342 Million € France 28,496 Million € U.K 19,050 Million €.**
- **Volkswagen** alone invests **9,500 Million and Siemens 8,300 Million € ROCHE 7,007 Million €**

Source : Ministry of Economy and Competitiveness Secretary of State for R&D&i

HOW?

- Define the Competitive Advantages and Business Opportunities:

- Spain : Industrial Developed Country
- Strong Position in Industrial Innovative Sectors with high future growth.
- Availability of Qualified Human Resources Researchers-Universities-Technology Centers.
- New Technologies –Strengths, Capacities in Nanotechnology.
- International Position: Spain Natural Platform Towards advanced markets: EU, USA

  Privileged Access to Latin -American markets, Africa and MiddleEast.
- Business Climate: Open Country for Investment

  Vast Structure of Incentives for Business Activities

  Favourable Fiscal System for R&D

Source : Ministry of Economy and Competitiveness Secretary of State for R&D&i

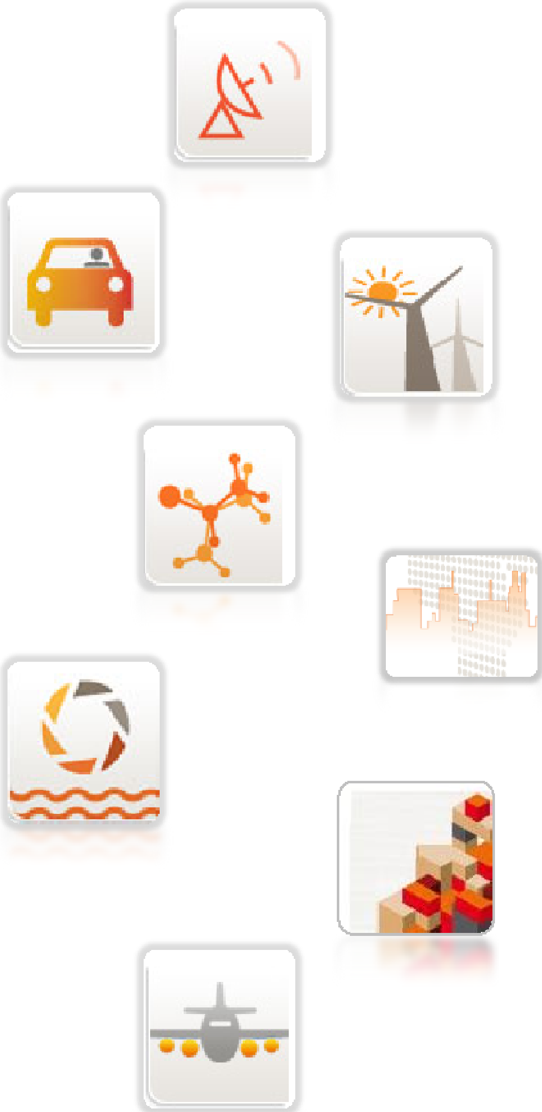
Business Opportunities Detection

- **Identification of Investment Projects Nanotechnology based (Nanotechnology Network-ICEX- INVEST – CDTI – ENISA- Ministry of Industry – Technology Centers- External Network-)**
- **Design and Implementation Anual program of Activities in National or International Nano Congresses or Forums**
- **Dissemination of the Spanish Capacities and Opportunities in NanoScience and Nanotechnology through:**

  - **Sectoral Activities with participation of ICEX-INVEST in Spain.**
  - **External Network (Embassies - Commercial Offices) Marketing**
  - **Spanish Platforms and Technology Networks.**

Source : Ministry of Economy and Competitiveness Secretary of State for R&D&i

Strategic Spanish Industrial Sectors- with high foreign Investment- Main Exporters – High Investment in R&d&i



- Automotive
- Chemical Industry
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- Aerospace
- ICT (Information and Communication Technologies
- Agro-food
- Energy .

Key figures: Automotive Industry in Spain

- Spain is the **2nd-largest car manufacturer in Europe and 11th in the world**.
- Spain is the **1st manufacturer of Industrial Vehicles** in Europe *
- Most of the **world's biggest car manufacturers are present in Spain with 17 automobile production plants**.
- **Nine out of ten** vehicles *Made in Spain* are exported to over **130** countries
- **Spain Automotive Parts Industry ranks 6th in the world in terms of turnover.**

* Including light commercial vehicles

Key figures: Automotive Industry in Spain

- Automotive Industry turnover accounts for **10% of Spain's GDP.**
- **300,000** people directly employed in the Industry **2,000,000 jobs** linked to the Sector.
- **1.9 Million** vehicles exported to **130 Countries** in **2013** Export value **€25bn.**
- Vehicle manufacturing in Spain was up **9.3%** in **2013 reaching 2,163,338 units**
- Vehicle **exports** increased by **8.7%** in **2013** to **1,879,974 units.**
- **Automotive Industry Main** exporter with **17%** of total Goods Exports.
- **3-4 Million** vehicles transported every year through the territory.
- **34 Technology Centers** devoted to Automotive Industry.
- **R&D**: investement of **2.8%** of turnover by Auto-Parts Manufacturers.
- **€63 Million** Annual average Investment in Professional Training by Car Manufacturers.
- Lower Unit Labor costs than EU average in the Industry.

Sources: ANFAC (Spanish Association of Vehicle Manufacturers) · SERNAUTO (Automotive Parts Exporters Association)
Latest available figures

Key figures: Foreign Direct Investment

- **New Industrial Plans** have been approved by the **9 Multinational** brands established in the country.
- **€5 billion** investment in progress to expand production in Spanish Plants, including new models and electric models
- **Plan** of the Spanish Industry to produce **1 Million** extra vehicles **"3 Million Plan".**

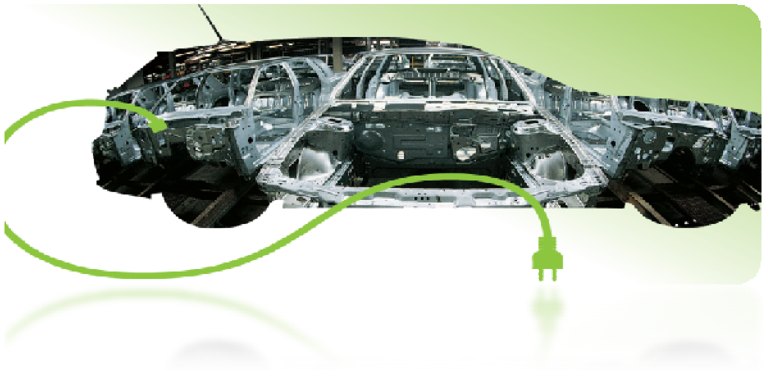
Sources: ICEX-Invest in Spain · Real Instituto Elcano · Ministry of Economy and Competitiveness (dataInvex)

Automotive Industry in Spain: AUTO-PARTS

- Spanish Auto-Parts Industry **ranks 6th in the world** in terms of Turnover.
- **Main global suppliers of the Automotive Industry** established in **Spain.**
- **1000 companies** belonging to **720** groups provide customized Service to Car Manufacturers
- **191,000 people** directly employed in the Sector
- Turnover of **€27.5 bn in 2012, 65%** exported to **150 countries.**
- **EU, USA, Mexico, North Africa and BRICs** top ranking destinations of Spanish Exports.

Source: SERNAUTO (Spanish Association of Automotive Parts and Accessories Manufacturers). Last available figures: 2012.

Eco-Electromobility: Spanish Capabilities and Leadership



- **Spain** contributes to **Eco-Electromobility** as a major component designer and manufacturer and as provider of **Infrastructures** and **Network Intelligence.**
- **74 Spanish Companies** and **Technology Centres** have taken part in **60%** of the European eco-electromobility Projects.

- Spanish Companies are leaders of **13** of said projects, including the **3 European** projects on **new batteries**: NECOBAUT, SOMABAT, GREEN LION.
- The **Spanish Technology Platform** Move to Future ww.move2future.es brings together **142 Key innovative** Companies, Research and Technology Centres.

- Spanish Scientific, Technological and Industrial capabilities on future transport are well summarized in the document **New Opportunities for the Clean Vehicle Sector in Spain.**

- **100** Eco-electromobility projects with Spanish Participation and **80 New** Products/Services compiled for Green Car Initiatives.

Eco-Electromobility: Spanish Capabilities and Leadership

- **RENAULT, MERCEDES -BENZ, PEUGEOT- CITROËN, NISSAN** are already manufacturing full electric powered and **hybrid vehicles** in Spain.
- **i2e Full Electric Bus** of IRIZAR already in the Market.
- **AUTO-PARTS** companies with plants in Spain are already providing **specific components and systems for electric and hybrid vehicles**.

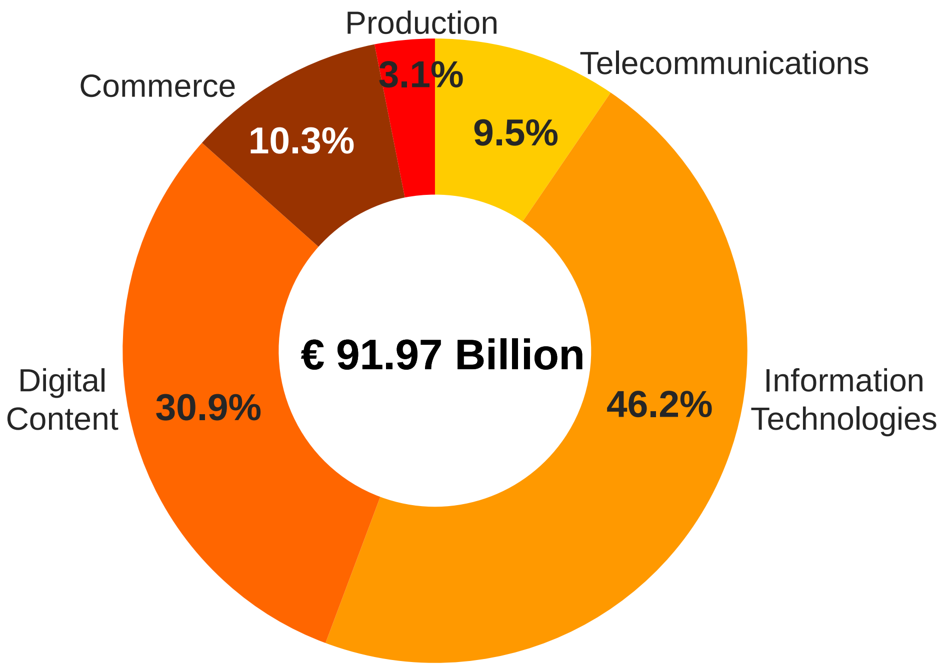



Investing in ICT
(Information & Communication Technologies)

Information and Communication Technologies Industry in Spain

- Spain is the fifth ICT market by volume in Europe: € 91,970 Million.
- The gross value-added at market prices represents almost the 5.2% of GDP in 2012.
- There are nearly 25,000 ICT companies, including digital content, operating in Spain. The sector is currently[1] employing almost 400,000 workers.
- Innovation investment (R&D&I) in the ICT sector has almost doubled over the last five years. It accounts for 40% of the total amount invested by the private sector in Spain.

Spain ICT Sector Turnover 2012 (€ million)



Source [1] : ONTSI (Spanish Observatory for the Telecommunications and Information Society) 2014 (Data 2012)

Leading ICT multinationals are already successfully located in Spain, taking advantage of Spain's benefits:

Software Vendors

Hitachi (Inspire the Next), SAP, Oracle, SAS, Microsoft, Software AG, Citrix, Novell, BMC Software, EMC², Unisys, Ubisoft

Hardware Vendors

Sun Microsystems, IBM, HP (invent), Fujitsu, Motorola, Sony, Apple, Bosch, NEC, Bull, Dell, Toshiba, Lenovo, Xerox

Telecom equipment vendors

Siemens, Nokia (Connecting People), Cisco, Samsung, ZTE 中兴, Ericsson, Huawei, Alcatel·Lucent, Nortel Networks

Service Providers

Vodafone, Orange, Google, Telefónica, BT, Yahoo!, COLT

ICT Services and Consulting Companies

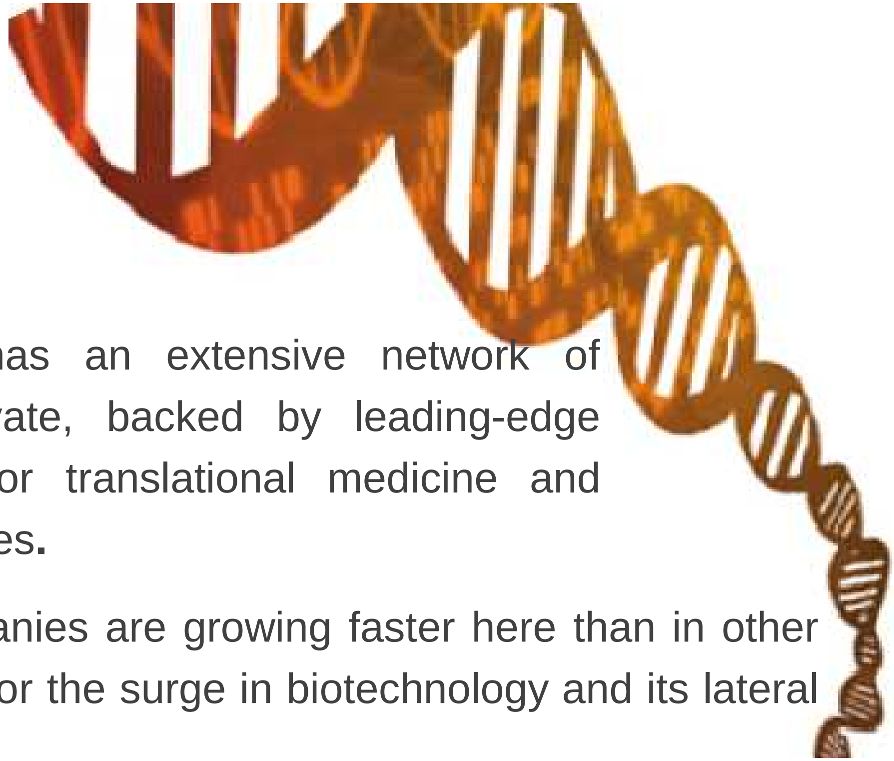
PricewaterhouseCoopers, Steria, Indra, Altran, Atos Origin, Neoris (Practical Visionaries), Accenture (High performance. Delivered.), Thales, Softtek, Ernst & Young, EDS, Capgemini (Consulting. Technology. Outsourcing), BearingPoint (Management & Technology Consultants), Deloitte.

Success stories

- IBM was set up in Spain in 1926. Today, the Spanish subsidiaries have 7200 employees.
- IBM Spain coordinates the activities of IBM in Portugal, Greece and Israel.
- Projects developed in Spain:
  - **Centre of excellence** in Barcelona to develop solutions for financial entities and the health sector.
  - **INSA**, an IBM branch, has set up two centres (Caceres and Salamanca) for software developments to be applied worldwide.
  - **MareNostrum**, supercomputer installed in the Barcelona Supercomputing Centre in collaboration with the University of Catalonia.
  - **Technology Expert Council** (TEC), which integrates IBM's best talents in Spain to enhance the leadership of the company and develop its technical knowledge.

- In the beginning, HP was set up in Spain as a manufacture centre.
- Nowadays, it has changed its strategy and has set up worldwide recognized support and R&D centres.

Investing in Biotechnology, Pharmacy and Life Sciences



- **Solid Basic Science:** Good scientific output. Spain is 10th world scientific power and 5th by scientific production in the EU15.
- **Integrated Healthcare System:** Spain has an extensive network of university hospitals, both public and private, backed by leading-edge research centres. The system is ideal for translational medicine and discovering new drugs and advanced therapies**.**
- **Emerging Biotech Industry:** biotech companies are growing faster here than in other countries. Spain is providing strong support for the surge in biotechnology and its lateral application to other sectors**.**
- **Excellent infrastructure for innovation:** exponential growth of science and technology parks, research centres and institutes of technology. Spain's infrastructure also incorporates the latest technology for life science projects**.**
- **Highly qualified workforce:** in some areas of Spain the percentage of workers with post-graduate studies is higher than the European average. There is a surplus of talent for competitive and innovative projects**.**

Biotechnology in Spain

- **Solid macroeconomic impact**
  - Directly and indirectly, the sector accounted for **7.8% of Spain's GDP** in 2012 (data close to traditional sectors as tourism and automotive)

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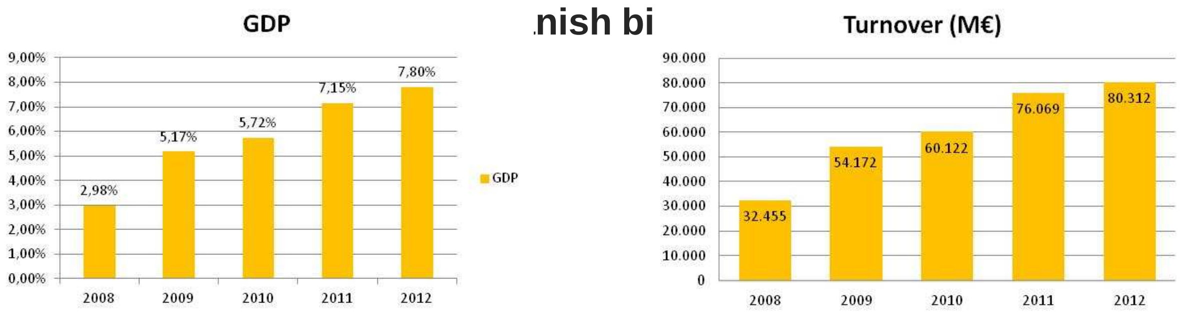


- **Spain: <u>Third Position worldwide in number of biocompanies dynamic creation of highly qualified jobs</u>**
  - More than **3000** companies involved in biotech activities and **625** strictly biotech
  - **203,000 employees** (+0.36%) and **9000** R+D activities dedicated (+2.14%).

- **Breakdown of biocompanies by activity**
  - Of all **strictly biotech** companies **53% focus on healthcare** and 32% on agro-food.
  - **68% of industrial companies** related to biotechnology focus on **agro-food** and 20% on healthcare
- **Strong SPIN-OUTs culture**
  - Every year : birth rate between **10 and 14 new companies**.

Source: ASEBIO 2013 Report

Distribution of biotechnology companies and biotech users by region

- After **Madrid** and **Catalonia, Andalusia** is the autonomous region with the highest number of strictly biotech companies.

- Most biotech companies are located in **Catalonia (21.76%), Andalusia (16.15%), Madrid (15.91%)** and **Basque Country (10.91%)**. Together they accounted for nearly the **50%** of the national total in 2012.

Source: ASEBIO 2013 Report

Pharmaceutical Sector: overview

- There are about **425 pharma companies** in Spain, including some with no production and/or marketing activity. Near to **60% are foreign** companies.

- Leading pharmaceutical/biotech multinationals are already located in Spain many of which have successfully chosen our country for the **establishment of Research Excellence Centres, Production or Distribution Centres.**

Distribution by region

These companies are mainly located in **Catalonia and the Madrid autonomous region**, which both have long-standing pharma traditions. Important companies can also be found in other regions such as Navarre, Andalusia and Galicia.

Source: FarmaIndustria Annual Report 2012 · PMFARMA website

Pharmaceutical Sector: R&D spending and workforce

The pharmaceutical industry is leader in R&D spending in Spain

- Pharmaceutical companies set aside near to **€1000 M. for R&D.**
- The sector accounts for **21% of all private R&D** spending in Spain.

Outsourcing R&D

- Apart from in-house R&D, the pharma industry leads the way in outsourcing this to other companies.

Job creation in R&D

- The pharma industry has **4537 employees** working **full-time on R&D**.
- This is **12% of all R&D** employment in Spanish industry.
- **200000 total employment rate**, direct and indirectly.

Biomedical researchers

- The biomedical industry created **2153 jobs** for graduate employees working exclusively on R&D.

Source: FarmaIndustria Annual Report 2013

Success stories

Proof of concept for the global market

- **Merck** has concentrated its global growth-hormone production in Spain and has recently announced a €14M investment to increase by 50% the production capacity of its facility in Madrid.
- **Novartis** announced in 2013 a €60M investment to expands its facilities in Catalonia for the manufacturing of the entire production line of inhalers. The expansion will create 70 jobs.
- **Lilly** has in Madrid its research centre for medicinal chemistry, one of the biggest in the world investing €20M and is planning an increase in its production and R+D activities.
- **Bayer** has concentrated its global aspirin production in Asturias investing 6M€.
- **Celgene** opened its first research centre outside the United States in Seville. The Celgene Institute of Translational Research Europe (CITRE) plans to focus on advanced therapies and regenerative medicine investing €60M.
- **Genzyme** has set up a sales office in Madrid and has a warehouse for domestic distribution.
- **GSK** has in Madrid its research centre for tropical diseases, Molecular Discovery Research and Drug Discovery activities. It plans to invest €20M in the next 4 years in their production center in Castilla y Leon.
- **TEVA** manufactures in Spain all the “Omeprazol” that exports to Europe. In the last 5 years it has invested €33M in its factory in Zaragoza.

Source: press articles

Investing in Aerospace

Aerospace Industry in Spain

- The **Spanish Aeronautics Industry** is **5th in Europe** in terms of turnover (€6.9 billion in Aeronautics in 2012) and employment (<38,000 employees).
- The Spanish space sub-sector is **5th** at the European level, employs more than 3,300 people and had a turnover of €737 million in year 2012.
- Half of the commercial aircraft in the world uses Spanish technology.

R&D:

- The **investment** in R&D activities reached **€764 M in year 2012** (11% of the industry turnover)

Government support:

- The Spanish authorities consider the Aerospace Industry one of the **Strategic** Industrial Sectors.
- Creation of several **public R&D centres** focused on the aerospace industry.

AIRBUS DEFENCE & SPACE
AERnnova
AIRBUS HELICOPTERS
ALESTIS AEROSPACE
ACITURRI
THALES AVIONICS
Indra
TECNOBIT
elecnor deimos
HEXCEL
GRUPO ITP Industria de Turbo Propulsores, S.A.
SENER
CESA COMPAÑIA ESPAÑOLA DE SISTEMAS AERONAUTICOS S.A.

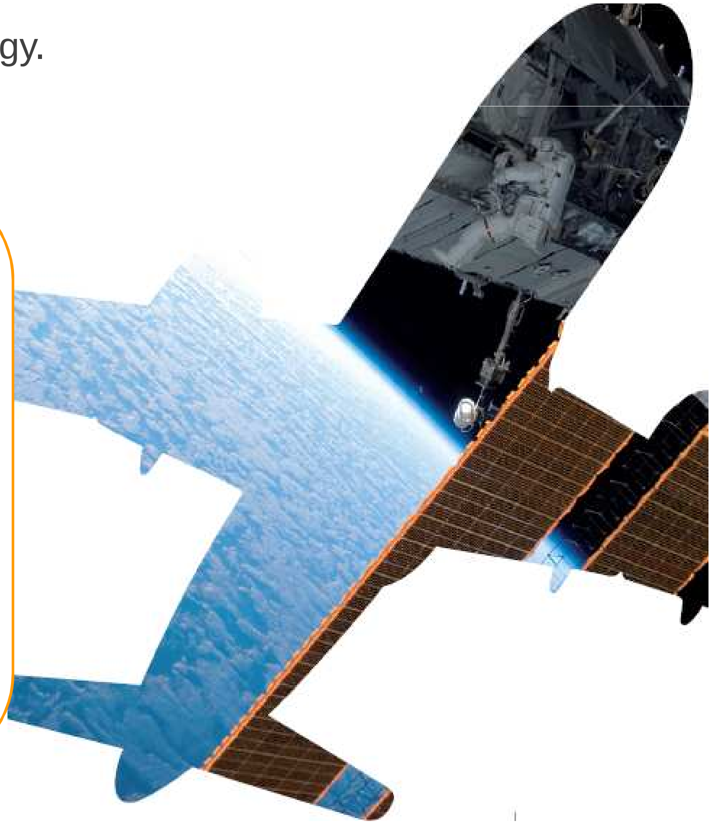
- The Spanish Aerospace industry is the **5th in Europe** (and 8th in the world) in terms of turnover (€6.9 billion in Aeronautics in 2012) and employment (<38,000 employees).

- The Spanish **Aeronautics** industry is a **world leader** in several **fields:** composite aero structures, low pressure turbine engines, Air Traffic Management systems, Military Transport Aircraft, etc.

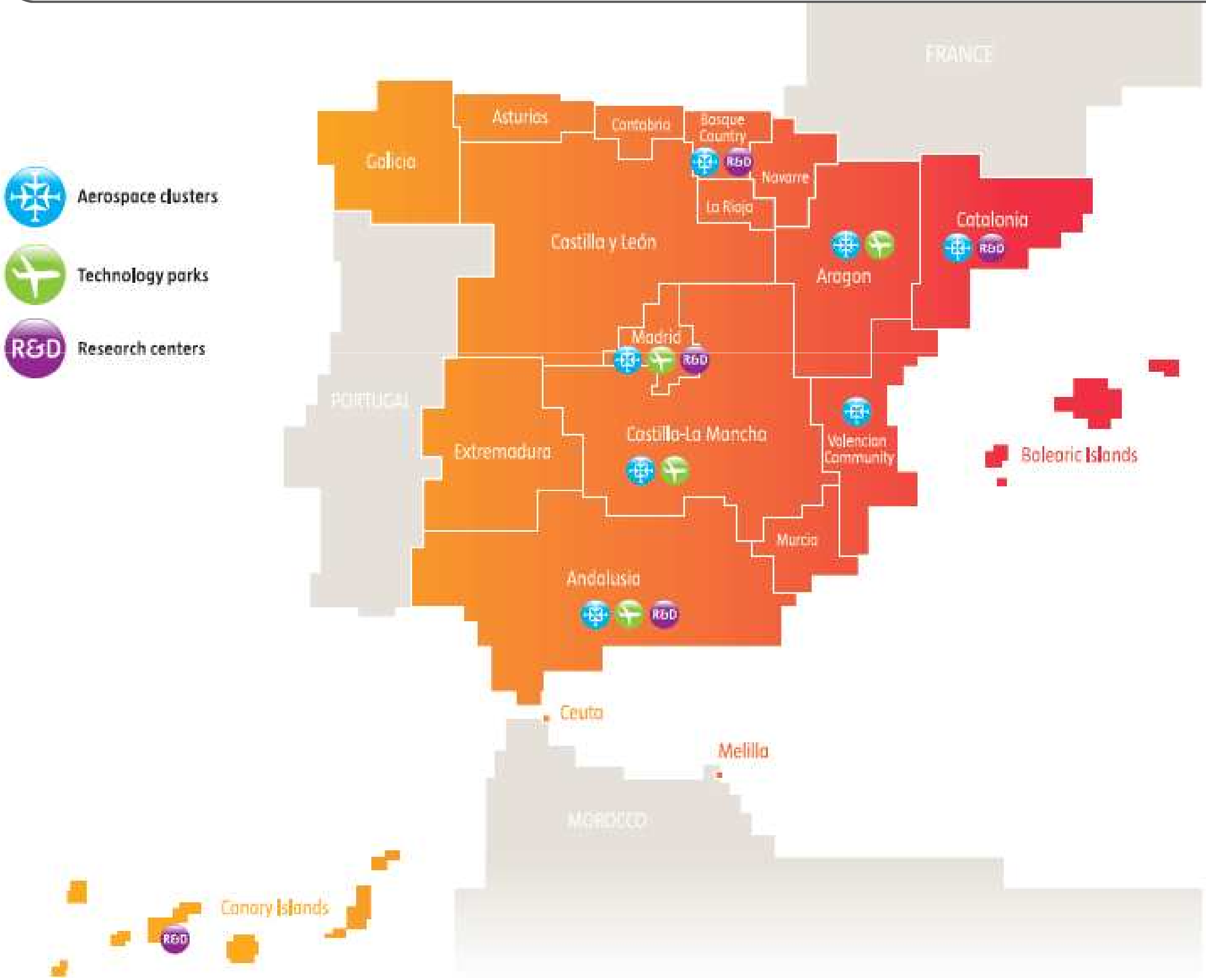
- The Spanish **Space** industry takes part in **important contracts** of high added value, in qualification of flight equipment and ground segment, and development of satellite systems. Moreover, Spain has satellite services operators. The Spanish Space sub-sector is 5th at European level, employs more than 3,300 people and had a turnover of €737 million in year 2012.

- Half of the commercial aircraft in the world uses Spanish technology.

- **R&D: invests 11% of turnover in R&D** (€764 M in year 2012)
- Highly qualified **human resources**: 55% of the aeronautics employees are University graduates or engineers and so are 70% of employees in the Spanish space industry.
- **Government support:** The Spanish authorities consider the aerospace sector to be strategic so it offers several grants and incentives lines.
- Creation of several **public R&D centres** focused on the aerospace industry.



Spain has significant **Aeronautics Clusters:** they provide new entering companies with infrastructures, research centers, technology parks offering interesting synergies.



Main companies

- AIRBUS MILITARY
- AIRBUS
- CASSIDIAN
- EUROCOPTER ESPAÑA
- elecnor deimos
- indra
- CESA
- gmv
- ARIES
- IBERIA
- TECNOBIT
- TORRES
- AERnnova
- ACITURRI
- ITP
- ALESTIS
- THALES
- HEXCEL
- Crisa
- GrupoTAM
- hispasat
- BOEING
- ELIMCO
- SENER
- tecnatom
- TEKPLUS
- DAS
- Inasmet
- inaer

Success stories

BOEING has developed important R&D Centres in Spain:

- •First Boeing R&D centre outside the USA
- •Main areas: safety, ATM and environmental technologies
- •April 2008: first flight of an aeroplane powered by hydrogen fuel cells – Ocaña (Madrid)

According to Boeing:

*"The reason for choosing Spain was the country's **outstanding role** in the **EU** and as a reference point with the **Latin American** countries.*
*It also shows the **relevant position** the Spanish Aerospace industry has acquired in the last few years and the country's capabilities in **environmental** and **ATM** technologies"*

Source: www.boeing.es

Success stories

The Consortium EADS-AIRBUS has a very significant presence in Spain

Civil aircraft

A380 – Double-deck, wide-body, four-engine jet airliner. It is the world's largest passenger airliner.
It began commercial service in October 2007 with **Singapore Airlines**.
Spain has a participation share of 8%.

A350XWB
Last Airbus civil aircraft model: from 250 to 350-seater. Over 70% airframe is made from advanced materials: composite structures, titanium and advanced aluminum alloys.
The two first test flights have already been developed.
Spain has a **11%** share of the program.

HMC (**Harbin** Hafei Airbus Composite Manufacturing Center is a joint venture between Airbus (20%) and its Chinese partners (mainly Harbin Aircraft Industry Group, 50%).
HMC manufactures elevators that are being delivered to Spanish company **Aernnova** (the first ship set was delivered last September 2013).
Aernnova will later on deliver those elevators to the Airbus plant in **Getafe** (**Madrid, Spain)**.

中航工业哈尔滨飞机工业集团有限责任公司
AVIC HARBIN AIRCRAFT INDUSTRY GROUP CO.,LTD.

Success stories

The Consortium EADS-AIRBUS has a very significant presence in Spain

Military aircraft

A400M – Military transport aircraft
Spain has a 15% of participation share, including:
-Final Assembly Line
-Simulation and training Center
- Services Logistics Hub
All of them located in **Seville (Spain)**
The first A400M aircraft have already been delivered to customer (France) in September 2013.

A330 MRTT – Multi Role Tanker Transport
Refueling aircraft, entirely developed by Spanish industry, including a refueling pole with electric controls.

Eurofighter Typhoon– Multi Role Fighter
14% share of participation by the Spanish industry. Major components developed in Spain:
-Right wing
-Leading edge slats.

Eurocopter– Military helicopter
Plant located in Albacete (Spain):
-Final Assembly Line
-Delivery Center
For models: NH-90, TIGER and EC-35

Investing in Chemical Industry

Strategic Sector of the Spanish Economy.

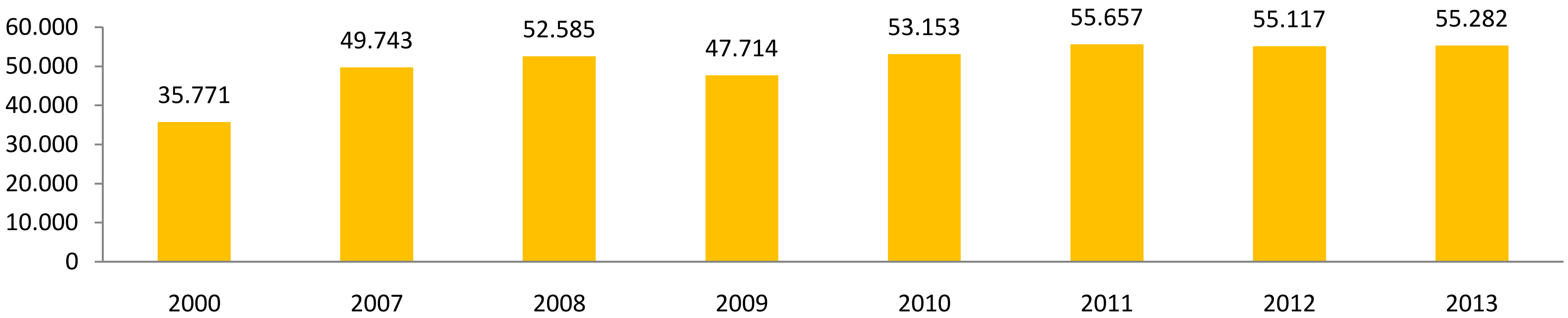
4.5% annual growth of Chemical products demand **forecasted worldwide**

Main Figures of the Spanish Industry:

- **3,000 Companies** with a turnover of **55 billion €** (2013).
- **11%** of Spanish Gross Industrial Product.
- **500,000** direct and induced **high qualified jobs.**
- High Domestic Consumption of Chemicals (**1,200 € /capita**).
- **2nd largest exporter** of Spanish Economy with more than **30 billion €**.
- Spain is **Gateway to EU** market and **Emerging Markets** (Africa).
- **Leader Sector in Innovation**: **25%** of Industrial Investment in **R&D&I**.
- **Competitive Talent: 118,600€** added value per-employee.
- **Sustained Growth** : **54.5**% growth through **2000-2013.**

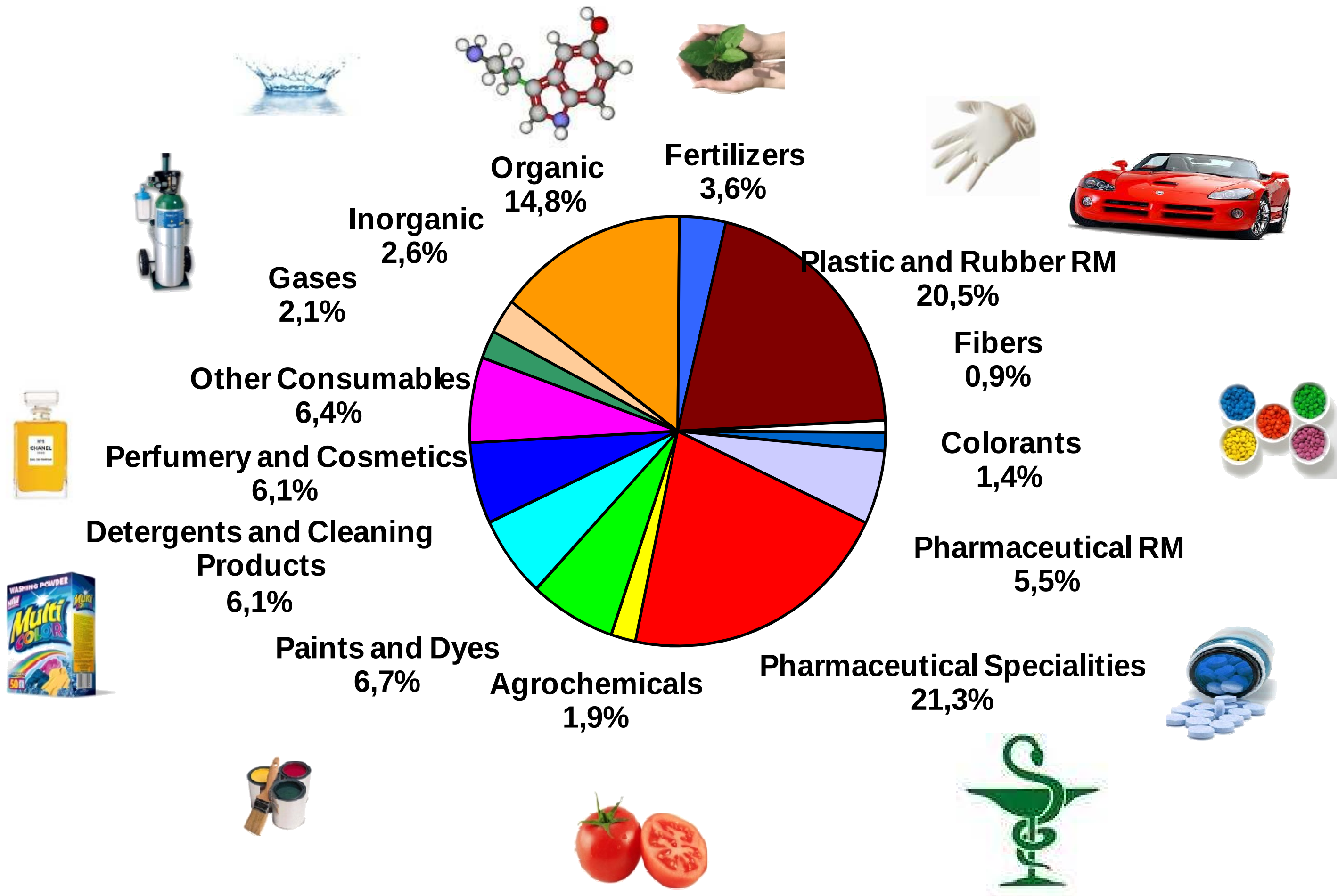
Source: FEIQUE:(Spanish Federation of Chemical Industries)

Evolution of Turnover in the Chemicals Sector 2000-2013 (millions €)



Source: INE Industrial Company Survey, Production and Price Index, and Own elaboration

Spanish Industry : Sectoral Specialization (Turnover 2013 (%))



Source: FEIQUE (Spanish Federation of Chemical Industries) · INE (National Statistics Office)

Investment Locations:
Productive sites and Clusters providing industrial and Logistics infrastructures.

Regional Implementation of the Spanish Chemicals Sector
Main areas of production

Areas with high concentrations of chemical industry

Location of other areas with high concentrations of chemical industry

- **Mediterranean region:**

  . largest chemical cluster in southern Europe and Mediterranean area: Tarragona (ChemMed)

  . Key clusters in Huelva and Algeciras

  . Chemical strategic sites in Valencia and Murcia.

- **North chemical sites:**
  Cantabria, Asturias, Basque Country.

- **Non-coastal chemical regions:**
  Madrid, Aragón, Castilla y León, Castilla-La Mancha.

Foreign Investment in the Chemical Industry

According to **fDi** Markets, Spain **ranks 2nd destination for Research & Development** projects and **5th destination for New Chemical** projects (all business activities) of Multinationals in Europe (period 2004-2014).

Country Ranking New Chemical Projects* in number of Projects

Destination Countries	Research & Development	Manufacturing	Headquarters	Design, Development & Testing	Logistics, Distribution & Retail	Others	Total
UK	61	188	26	30	39	87	431
Spain	33	178	15	11	16	39	292
France	28	245	10	17	15	78	393
Germany	23	286	22	22	20	187	560
Ireland	21	67	9	3	25	14	139
Belgium	15	113	6	16	13	34	197
Russia	14	234	4	8	16	88	364
Hungary	13	111	1	-	17	22	164
Sweden	9	39	7	2	7	15	79
Poland	8	193	1	6	16	61	286
Austria	8	41	3	3	8	14	77
Total World							**4,320**

*Source: fDi Markets. *Sectors included: Chemicals (105), Pharma (87), Plastics (81) and Rubber (19).*

292 New Projects have been developed by **163** worldwide Multinationals with a Capital Expenditure of **11,433.4 millions USD.** (period 2004-2014)

New Chemical Projects by Parent Company, investing in Spain in four selected sectors* (millions USD)

Parent company	Projects	Capex	Avg Capex	Jobs Created	Avg Jobs	Companies
Bayer	11	144.3	13.1	325	29	4
BASF	10	365.3	36.5	448	44	4
Ube Industries	10	498.4	49.8	623	62	3
Dow Chemical	9	722.6	80.3	403	44	2
Novartis	8	665.3	83.2	1,135	141	1
DuPont	7	380.8	54.4	367	52	2
Boehringer Ingelheim	6	118.9	19.8	233	38	2
Sanofi-Aventis	6	163.9	27.3	525	87	2
Messer Group	5	110.3	22.1	139	27	1
General Electric (GE)	5	1,806.3	361.3	1,175	235	3
Michelin	5	180.8	36.2	386	77	1
Solvay	4	113.8	28.4	106	26	2
Merck & Co	4	550.4	137.6	986	246	3
Israel Chemicals (ICL)	4	395.0	98.8	826	206	2
Henkel	4	13.3	3.3	74	18	2
Les Laboratoires Servier	4	30.9	7.7	81	20	2
Hexcel	4	190.5	47.6	165	41	2
Renolit	4	89.1	22.3	72	18	2
AkzoNobel	4	73.6	18.4	160	40	2
GreenChem	3	79.5	26.5	123	41	1
Companies 21 to 163	175	4,740.6	27.1	8,650	49	149
Total	**292**	11,433.4	39.2	17,002	58	191

*Source: fDi Markets. *Sectors included: Chemicals (105), Pharma (87), Plastics (81) and Rubber (19).*

Main Foreign Companies in Spain

BAYER
BASF The Chemical Company
UBE
DOW
NOVARTIS
Boehringer Ingelheim
sanofi aventis
MESSER Gases for Life
DUPONT
SERVIER
SOLVAY
ICL
GE
HEXCEL
RENOLIT
MERCK
Henkel
GreenChem
AkzoNobel

New Technologies in Spain

Nanotechnology Initiatives and Companies in Spain

- **NanoSpain: Spanish Nanotechnology Network** (www.nanospain.org) brings together **310 research groups, 50 companies** and a **research task force of around 2,500** researchers and technicians. Network coordinators: *Phantoms Foundation* (www.phantomsnet.net) and *CSIC* (www.csic.es).

- **Phantoms Foundation** (www.phantomsnet.net) focuses its activities on nanoscience & nanotechnology and is a key actor in structuring and fostering European excellence and enhancing collaborations in this field.

- **100 innovative companies** providing a general overview of the sector in Spain catalogue: http://www.phantomsnet.net/Resources/nanodoc.php?project=1

- **Spanish N&N Thematic Networks: RENAC (**Construction), **SUSCHEM** (Sustanaible Chemistry); **NANOMED** (Spanish Nanomedicine Platform); **GENESIS** (STP Nanotechnology and Smart Systems Integretion)**; MATERPLAT** (STP Advanced Materials and Nanomaterials); and **FOTONICA 21** (STP Photonics).

Source: NanoSpain · Phantoms Foundation

Research Groups in Nanospain Network (Regional Distribution July 2012) **334 groups**

Source: Phantoms Foundation www.phantomsnet.net

Nanotechnology Initiatives/ Infrastructures

Andalucia

Aragon

Asturias

Barcelona

Madrid

Pais Vasco

Portugal

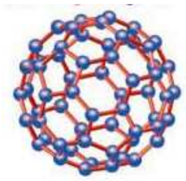
Toledo — Instituto de Materiales Moleculares, Nanociencia y Nanotecnología

Valencia

Emerging N&N in Spain

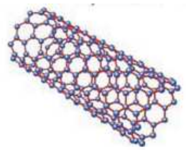
Source: Phantoms Foundation www.phantomsnet.net

Nanomaterials and Graphene



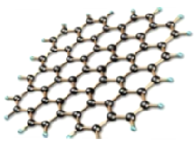
- In the fields of **graphene research** Spain occupied the **8th position** in the ranking of countries in **published papers 2004-2011**. (*source Thomson Reuters Global Report Material Science*)

- Spain is actively participating in the **EU Graphene Flagship**. **300 Spanish researchers** are currently working on graphene (source: **CSIC -** Institute of Materials Science of Madrid)

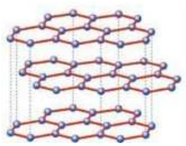


- **CSIC** –National Research Council stands **3rd** among world wide Institutions **in Graphene research** (*Thomson Reuters Global Report*)

- Spanish emerging companies among European leaders in **graphene production** and exports. ***Graphenea*** (www.graphenea.com), ***Granph Nanotech*** (www.granphnanotech.com) or ***Avanzare*** (www.avanzare.es) are developing innovative processes and advanced products to supply companies as **Nokia, Philips, Canon, Nissan** or **Sigma Aldrich.**



- ***CDTI*** (Center for Industrial Technological Development) and the Spanish petrochemical multinational ***REPSOL*** have co-invested in the company ***Graphenea*** to develop high quality graphene for international markets.



- **Research laboratories** in Spain are developing advanced products for electronic applications used by multinational companies like ***TOSHIBA*.**

Sources: CDTI (Centre for Industrial Technological Development · CSIC (Spanish National Research Council)

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Orense 58, 3rd floor
28020 Madrid SPAIN
T (+34) 91 503 58 00
E-mail: investinspain@icex.es
www.investinspain.org