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EUROPEAN ENERGY CLUSTERS
REINA PLUS Partnership

European and Colombian Energy Clusters: key stakeholders for business collaboration

Launch event: Smart Specialisation in Latin America
Brussels, 15th March 2017

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REINA PLUS Project objectives

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Support and reinforce the internationalization of European SMEs in selected renewable energy markets…

- **Latam markets with *<u>high growth potential:</u>* Mexico, Brazil, Chile, Colombia**
- ***<u>Other energy markets:</u>* North América and North Africa mainly.**

…by fostering the collaboration and integration of capacities of companies involved in the four European Energy Clusters.

- **Strengthen and consolidate the ESCP** by shaping a common identity and identifying, preparing and launching specific business collaboration initiatives in the target markets
- **Integrate European SMEs into global value chains**
- **Strengthen the cooperation** with already contacted **relevant stakeholders in the target markets** and **establish new strategic contacts**
- **Support the European Comission services and/or EASME in the organization** and participation in initiatives and matchmaking events around the "Low Carbon Business Actions" in Mexico and Brazil.
- **Monitor and review the activities and indicators**, with a view to learn from them, to evolve and adapt the strategies and to share the knowledge and best practices developed in the project at a European level: dissemination and exchange of experiences with other ESCPs.

Cluster Energía BASQUE ENERGY CLUSTER · ENERGYIN · MERINOVA TECHNOLOGY CENTRE · CTC CLEANTECH CLUSTER

The REINA PLUS Clusters

Partner clusters in the ESCP-4i:

- **Cluster de Energía (Basque Country, Spain)**
- **Oekoenergie-Cluster (Upper Austria)**
- **EnergyIN (Portugal)**
- **Merinova (Ostrobothnia, Finland)**

Total number of cluster companies: **430+**
Combined annual turnover of cluster companies: **50 billion Euro+**
Combined number of employees: **70,000+**

Strategic RIS3 areas of collaboration:

- Renewable energy
- Smart grids, energy storage
- Energy efficiency in buildings

See: http://www.clustercollaboration.eu/escp-profiles/reina-plus

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Colombia is a country with an economy that stands out for its high growth rate and that is improving its stability

Socio-economic context

- Colombia is the **5th economy in Latin America in terms of GDP,** only overtaken by Brazil, Mexico, Argentina and Venezuela, and standing out as the economy with the highest growth rate in the region (4,3% annual growth since 2006)
    - It has a population of **48 million inhabitants,** making it the third most populated country in Lain America, although it has the highest unemployment rate of the region (9%)
    - Its GDP per capita is around 7.450$, 25% compared to Spain (30.000$) and below the main economies of Latin America such as Brazil (11.150$) and Mexico (9.500$)
    - Since 2013 **the currency has depreciated,** until reaching maximum levels of 2.928 pesos per dollar in 2016
    - It has had low inflation levels over the last decade, although they have recently risen to 5%, with an interest rate of 11%, which has decreased significantly since its maximum levels in 2008
- The country has taken relevant steps towards a **greater stability,** with the advances carried out in the lasts months to reach a **peace agreement** for the definite mutual cease-fire between the government and the FARC guerrillas being specially relevant
- It is an **economy with a medium-low openness level,** with a trade openness rate of 27,5%, which is lower than other countries in the region such as Mexico or Chile
- Despite being the fourth economy in Latin America in the World Ranking of Ease of Doing Business, it has a **very high tax burden,** above the average of the region, and it **falls behind in the global competitiveness and infrastructure indices,** with the highest logistic costs in Latin America that reflect the existing the complicated geography of the country and the deficit in the development of infrastructures

Colombia has 48 million inhabitants and represents the fifth economy in Latin America in terms of GDP

Energy is one of the Smart specialization areas in Colombia, with a high dependence on hydraulic energy and a great growth potential of the rest of renewable energies

Regulatory framework

- During the last years, there has been **progress in the regulation of energy** to encourage the use of renewable energies in the country, largely thanks to the **Law 1715** on Renewable Energies enacted in 2014, which foresees the implementation of a series of tax incentives which aim to attract investors to the sector
  - However, the law is not in force yet, since it needs the approval of the Ministry of Environment
- The energy policy is expressed through several complementary plans: the 2050 Energy Vision, which establishes the country's long term energy objectives, and the Rational and Efficient Use of Energy Programme, which focuses on the short term objectives and actions
  - In addition to this, the country has electrical grid plans that impact the extension of the country's electrical coverage

Energy situation

- Despite the great influence of hydroelectric energy, which represents more than two thirds of the installed capacity, the rest of the renewable energies have little relevance in the energy mix, since they only represent 3% of the currently installed capacity, with a total of **420 MW**
  - Biomass energy represents nearly half of the installed capacity of non conventional renewable energies (206 MW), followed by mini hydraulic with 46% (194 MW), while wind energy has less than 20 MW
- Non conventional renewable energies are expected to have an **additional capacity between 2 GW and 3,2 GW by 2030,** depending on the development of the Law on Renewable Energies
  - The most significant increase is foreseen for the 2020-2025 period, during which an additional capacity of 1,2-1,5 MW are expected
- The **growth will focus on wind energy**, which will introduce an **additional 1,5 GW** by 2030, representing more than half of the total additional capacity expected, while there are no **foreseen significant installations of biomass** during the next years (lower than 0,5 GW in the most optimistic scenario)

Electrical grids development and windfarms are the main investment priorities for the next years

Electrical grids

- The priority of the Reference Expansion Plan of Generation and Transmission 2015-2029 is to reinforce the transmission system.
- Although the improvement of the ZNI transmission system is a priority in the electrical sector and the improvement of some of the transmission lines are foreseen, **both the tenders of the last two years and the extension of the network** expected in the future **are focused on the National Interconnected System**
- The **electrical industry is very concentrated** in all its areas of activity
  - Generation: the first main operators of the country make up more than 80% of the installed capacity, among which EPM, Emgesa and Isagen jointly represent 60%
  - Transmission: area dominated by Interconexión Eléctrica (ISA), which owns 81% of the network's assets through its subsidiaries Intercolombia and Transelca
  - Distribution: the four leading companies (EPM, Codensa, Electricaribe and Celsia) jointly represent 66% of the Colombian market

Wind energy

- Colombia has a **wind energy potential of 28.500 MW ,** with several great resource areas, among which the regions in the north-east of the country (Costa Norte and Santanderes-Boyacá) stand out, specially the department of La Guajira
- Although the country currently only has **one wind farm in operation** (Jepírachi, located in La Guajira), with an installed capacity of 20 MW, there are a total of 12 projects under evaluation that would imply **an additional 1.591 MW** and would enable the country to reach the goals set for 2030
  - All of the projects under evaluation are found in the department of La Guajira and their development is carried out by the Colombian company Jemeiwaa K'ai (549 MW), followed by Isagen (420 MW) and Abengoa (332 MW)
- Since it is still in a premature phase of its development, the **Colombian wind energy value chain is not made up of a lot of companies**

Key stakeholders contacts in Colombia

Organization	Interest	Contact	Position	Mail	Telephone
MINMINAS - Ministerio de Minas y Energía	General energy	Carlos Fernando Eraso Calero	Energy Viceminister	carlos.eraso@minminas.gov.co	(57) 1 220 0300
MINMINAS - Ministerio de Minas y Energía	General energy	Rogerio Ramírez Reyes	Electrir Energy Manager	rramirez@minminas.gov.co	(57) 1 220 0300
UPME - Unidad de Planif. Minero Energética	General energy	Jorge Alberto Valencia Marín	General Manager	jorge.valencia@upme.gov.co	(57) 1 222 0601
UPME - Unidad de Planif. Minero Energética	General energy	Ricardo Humberto Ramírez	Electric Energy Vicedirector	ricardo.ramirez@upme.gov.co	(57) 1 222 0601
IPSE (Instituto de Planificación y Promoción de Soluciones Energéticas para las Zonas No Interconectadas)	Electrical grids / Renewable en.	Larry Edwin González	Secretario General	larrygonzalez@ipse.gov.co	57 1 639 7888
Programa de Transformación Productiva	General energy	Diana Paola Diaz Betancourth	Ejecutiva de Energía	diana.diaz@ptp.com.co	(57)(1) 749 10 00 1123
CÁMARA DE COMERCIO DE BOGOTÁ-CLUSTER DE ENERGÍA	General energy	Carlos Felipe Torres Santiago	Cluster Senior Profesional	carlos.felipe.torres@ccb.org.co	5941000 Ext. 3736
Clúster de Energía Eléctrica de Medellín	General energy / Electrical grids	Jaime Alberto Arenas Plata	General Manager	jaime.arenas@camaramedellin.com.co	(57) 4 516 7770 xt 1016
Clúster de Energía Eléctrica de Bogotá	General energy / Electrical grids	Sandra María Betancur	General Manager	sandra.betancur@ccb.org.co	(57) 1 383 0330
ACER - Asociación Colombiana de Energías Renovables	General energy / Renewable en.	Ana María Murillo	President	dejecutiva@asorenovables.com	315 552 3407
ACER - Asociación Colombiana de Energías Renovables	General energy / Renewable en.	Jaime Millán Valencia	General Secretary	dejecutiva@asorenovables.com	315 552 3407
SER Colombia - Asociación de Energías Renovables de Colombia	General energy / Renewable en.	Azahara López	President	azahara.lopez@enel.com	
SER Colombia - Asociación de Energías Renovables de Colombia	General energy / Renewable en.	Andrés Garrido	General Secretary	andresgarrido@prodiel.com	
Relevant Departments					
Department of La Guajira	Wind energy	Alexa Yamina Henríquez Lúquez	Operations Director of Dwelling and Environment		
GOBERNACIÓN DE ANTIOQUÍA	General energy	Gilberto Quintero Zapata	Secretario de Infraestructura Física	gilberto.quintero@antioquia.gov.co	0094 3837901

Objectives of the collaboration between European and Colombian clusters

A. A mutual knowledge and dissemination of the smart specialization priorities in Energy of the European and Colombian regions involved, and their potential opportunities for SMEs, Cluster associations and other stakeholders.

B. The engagement of a significant number of Colombian and European companies, open to cooperation, willing to participate in the planned activities and matchmaking missions.

C. An effective implementation of the actions and the organization of the matchmaking missions, as the best way to facilitate added value contacts and networking potential to all the agents involved.

D. A valuable assistance to SMEs in the identification, definition and, whenever possible, the full development of cooperation agreements and partnerships between Colombian and European companies, in order to jointly face the challenges of the energy markets in Colombia.

Business mission of Basque Clusters to Colombia (Bogotá, Barranquilla and Medellín, 29/02 to 4/03/2016)

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- 5 Basque Clusters (Energy, Environment, ICT, Construction, Logistics) and 23 companies.
- Meetings with 10 Colombian public entities and companies: Productive Transformation Program of the Industry Ministry of Colombia (PTP); Chamber of Commerce of Bogotá; EPM, Empresa de servicios Públicos de Colombia; ISAGEN; CODENSA; IPSE; Electric Energy of Medellín, . . .
- Conference organized by FINDETER

Incoming mission to Europe of Colombian clusters and companies (Bilbao, 3 to 5/11/2016)

- 3 Colombian energy clusters (Medellín, Bogotá and Sur Occidente), 3 companies (EPM, the main utility company in Medellín, Proeléctrico, Sodinlec and Automatización Avanzada) and 1 representative of PROCOLOMBIA.
- Workshop with a series of institutional presentations from representatives of SPRI, the Basque Economic Development Agency, PROCOLOMBIA, the 3 Colombian clusters and the Basque Energy Cluster.
- Matchmaking session with 11 European companies.
- Visits to 3 leading companies in the Smart grids and Wind energy sectors and to the labs of electrical technologies of a Research centre.

Actions planned for 2017: business missions to international events in Colombia

- EU mission to ACODAL 60th Congress, tradeshow & B2B. Cartagena de Indias, Colombia 31/05 – 2/06, 2017.
  - “Water, Clean technologies and Renewable Energies International Congress”. The event gathers renowned specialists form academia, technology, commerce, business and finance involving annually international agents. The congress program will include clusters as one of the topic. This year, Spain is the selected partner country and ACLIMA (Basque Environmental Cluster) will co-organize the Congress.
  - B2B among the participant companies and organizations.
  - Business tradeshow
  - Organized meetings with Colombian Clusters

- EU mission to FISE “International Electric Sector Fair”, Medellín, Colombia 27/11 – 1/12, 2017 . Probably the most dynamic Colombian Region in respect to Energy activity. This tradeshow is considered the most important gathering among the LATAM & CARIBEAN Region. FISE profile´s comprises, over 250 stands, 15.000 visitors and a proper space for meetings. Everything around the electric sector last solutions (goods and services). Panelist and presentations are given by leaders of relevant companies and focused in the electric industry.

Conclusion and future challenges

- Colombia has been included in the REINA PLUS ESCP Action Plan as one of its target markets, due to the potential growth of the energy market in Colombia and the positive contacts and information collected during the direct and incoming business missions developed in 2016.
- The potential for business opportunities in the energy smart specialization areas, such as renewable energies (mainly wind energy) and electricity distribution and transmission networks, has increased the interest of European SMEs to engage in and collaborative events and partnerships with Colombian counterparts.
- Clusters associations have become so far key stakeholders to facilitate contacts and networking activities between Colombian and European companies.
- Increased efforts and resources should be devoted in the next steps to help companies (especially SMEs) in the definition and development of collaboration projects and agreements. Clusters can also support this kind of activities provided they endorse the required skills and human resources

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