



ALCUE NET

Latin America, Caribbean and European Union Network on Research and Innovation

EU CELAC Renewable Energies Working Group EU-CELAC Joint Initiative for Research and Innovation



ALCUENET Energy Workshop 12th and 13th November Seville

Implementation JIRI, priorities



ALCUENET Energy Workshop 12th and 13th November Seville



■ Policy Dialogue on R&D

- Research and Innovation considered as component of the agenda of the Summits EU-CELAC from 2010.
- The political motivation fosters the debate of ministerial representatives, Senior Officials Meetings (SOM), to implement the EU-CELAC Joint Initiative for Research and Innovation, JIRIs and to build up an strategic agenda

- **Senior Officials Meetings** (SOM) with EU-CELAC representatives were established as a regular bi-regional dialogue on STI to implement the JIRI through biannual Action Plans, focus on thematic areas (Working Groups- WGs):

The JIRI ¹

aims at contributing to sustainable development and social inclusion in **six priority areas** of cooperation related to key global societal challenges as mentioned in the Innovation Union Communication²

Priority areas:

1. **Energy**
2. Environment and Climate Change
3. Agro Food
4. Health
5. ICT
6. Horizontal activities regarding S&T policies focused in both institutional and human capital formation

Working Groups:

1. **Renewable Energies**
2. *Bio-economy*, including food security
3. Biodiversity and Climate Change
4. ICT
5. Cross cutting issues
6. Health(2013)



Background : The EU-CELAC S&T Policy Dialogue

- **SOM Thematic WGs** define specific issues and objectives and prepare an implementation plan that will be reported annually to the SOM

Working Groups:

1. Renewable Energies → Mexico (CONACYT) + Spain (MINECO)
2. Bio-economy, including food security → Argentina (MINCYT) – Francia (Min Edu)
3. Biodiversity and Climate Change → Colombia (COLCIENCIAS) – Francia (Min Edu)
4. ICT → Chile (CONICYT) –Finlandia (VTT)
5. Cross-cutting issues → Mexico (CONACYT) + Portugal (FCT)
6. Health (2013) → Spain (MEC) – Brasil (Fiocruz+CNPq)
7. Mobility (Integrated into 5th, 2014) → Finland



Supporting EU CELAC SOM

JIRI Initiative on R&I

ALCUE NET (BE, BD&CC, ICT, RE)

EULAC Health (Health)



Thematic Reports EU-CELAC SOM WGs

Concept note on strategic issues for SOM discussions and recommendations



EU CELAC SOM Meetings

JIRI Annual Work Plan (implemented by ALCUE NET + EULAC Health + ERA NET + Bilat Projects)



Work process- Narrowing down

Research areas and subareas of common interest

BIOENERGY

- Biomass availability and supply
- Conversion processes
- Markets and regulatory framework
- Sustainability

SOLAR THERMAL

- Quality Assurance Procedures towards certified equipment, harmonization of equipment (and installers).
- Thermal energy storage mainly for distributed generation

WIND ENERGY

- Wind Resource Assessment and short term forecasting: computational tools
- Wind Turbines: technology for regional fabrication
- Removing barriers and promoting deployment.

PHOTOVOLTAIC

- Solar resources prediction and monitoring
- Quality Assurance Procedures
- Stand alone systems
- Advanced grid integration & large integration of PV in building areas
- Capacity building



Objectives of the WGs to go forward with implementation of the JIRI

- 1) Identify research and innovation, basic lines of high interest for EU-LAC cooperation considering as key criteria the specific EU and LAC added value and subareas and topics for potential collaboration in line with the priorities of the SET Plan and LAC
- 2) Working documents on EU-LAC joint priorities considering:
 - Societal challenges (global concerns related to each area , WG)
 - Research challenges (knowledge gaps and needs)
- 3) Proposals for activities in renewable energies for each objective (joint calls for collaborative projects or networks, joint activities coordination of existing projects, staff exchanges, training, infrastructures, etc.) mobilizing expertise and resources among countries or institutions
- 4) Preliminary identification of funding schemes but not only related to EC policy instruments (e.g including thematic ERANETS), also related to EU CELAC countries (e.g. CYTED).

At this moment this process is supported mainly by ALCUENET with SOM EU CELAC mandate to act as General Secretariat.





R&I SPECIFIC COMMON AREAS FOR POTENTIAL COLLABORATION

ALCUE NET

Latin America, Caribbean and European Union Networks on Research and Innovation

BIOENERGY

- Biomass availability and supply
- Markets and regulatory framework

WIND ENERGY

- Wind Resource Assessment and short term forecasting
- Large Wind Turbines
- Social Acceptance & Removing barriers

- ☐ Improve conversion processes
- ☐ Sustainability

EFFICIENCY

- ☐ Integration of PV in buildings areas
- ☐ Advanced grid integration

- ☐ Small Wind Turbines regional technologies

- ☐ Low thermal in buildings
- ☐ Medium thermal industrial apps

SOLAR PHOTOVOLTAIC

- Quality Assurance Procedures
- Stand alone systems

**Studies
of solar
resources**

SOLAR THERMAL

- Thermal energy storage & Thermochemical
- Quality Infrastructure (Standardization, Metrology, Accreditation)



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EU-CELAC WGoRE Solar Thermal Power

Ranked Topics

1. **Studies of solar resources in Latin America including social, geographical, economic and industrial issues.**
2. **Quality Infrastructure (Standardization, Metrology , Accreditation)**
3. **Solar Energy Storage :Thermal storage (phase-change materials, fluid heat transfers, advanced systems, mechanical storage configuration) and Thermochemical processes (metallic oxides, salt fluids and other endothermic process for storage)**

Efficiency related topics

1. **Low temperature solar Thermal Energy including Solar thermal technologies in building**
2. **Medium temperature Solar Thermal Energy for industrial Applications**

Additional interest for cooperation

1. Solar concentration for solar power and direct solar steam for electrical and thermal power.
2. Development of critical concentrator materials (receivers, solar fields mirrors, electric systems, heat transmission fluids, receivers, solar fields, among others) components and control system including environment adaptations
3. Solar fuels, H2 production and another commodities
4. Water-use footprint (desalinization, toxicity treatments, detoxification)
5. Hybridization of conventional systems,(biogas, natural gas, biomass, geothermal,



EU-CELAC WGoRE Solar Thermal Power

Ranked Topics

1. **Studies of solar resources in Latin America including social, geographical, economic and industrial issues.**

These studies has a great potential in Latin America but considering other aspects from EU

2. **Quality Infrastructure (Standardization, Metrology , Accreditation)**

US standards are used in LAT but maybe EU standards are more appropriated. Radiation Range is higher in LAT. Labs Certification is needed in LAC. An Article 185 for Metrology UE (EMPIR)

3. **Solar Energy Storage :Thermal storage (phase-change materials, fluid heat transfers, advanced systems, mechanical storage configuration) and Thermochemical processes (metallic oxides, salt fluids and other endothermic process for storage)**

Efficiency related topics

1. **Low temperature solar Thermal Energy including Solar thermal technologies in building**

Flat plate solar collectors for heating, drying, cooling . There are already patents and Technologies in LAC for using in Food Industry (driers, cooling)

2. **Medium temperature Solar Thermal Energy for industrial Applications**

It is a high interest topic because of the broad uses of this technology in Pasteurizations, UHT, Sterilization Cleaning, Photo-Bleaching, Tining Mining +Salt crystallization



EU-CELAC SOM WG ON RENEWABLE ENERGY

ALCUE NET

Solar Thermal Power

Additional interest for cooperation

1. Solar concentration for solar power and direct solar steam for electrical and thermal power.

Mx parabólic chanel

1. Development of critical concentrator materials (receivers, solar fields mirrors, electric systems, heat transmission fluids, receivers, solar fields, among others) components and control system including environment adaptations

Environmental especial condiitions in Atacama, Mexico, Altiplano North East Brasil . Br+Ar+Cl+Mex There are solar infraestructures EU SFRI-EUSOLARIS-PSA (EU-Esp) LACYQS (Mex)

1. Solar fuels, H2 production and another commodities

It constitutes and important issue related to the production of syngas from methane or industrial wastes as coque

1. Water-use footprint (desalinization, toxicity treatments, detoxification)

Photocatalisis plants, PSA -CIEMAT (ES) IER UNAM (Mx) INENCO- (Salta Argentina)

1. Hybridization of conventional systems,(biogas, natural gas, biomass, geothermal,

EU-CELAC WGoRE Solar Thermal Power

resources in LAC
including social,
geographical,
economic and
industrial issues

Quality Infrastructure
(Standardization,
Metrology ,
Accreditation)

Solar Energy
Storage (Thermal
storage+
Thermochemical)

Low temperature solar
Thermal Energy including
Solar thermal technologies
in building

Medium temperature
Solar Thermal Energy
for industrial
Applications

Critical Mass

Higher radiation
range/ art 185
metrology

LAC low vs EU
high)
IMDEA/ CENET
(ES)ENEA (IT)

Mx, Pe, Ar, Cu, Pan, Co,
Ecuador. There are already
patents and Technologies
in LAC for using in Food
Industry (dryers, cooling)

Austria-AEE
ITESO Guadalajara.
IER_UNAM -- (Mex)
INENCO (Salta
Argentina)

Collaborative
projects-
Twinning

B

A

B

A

A

Research
networks

A

B

B

B

B

Mobility- Human
resources

A

A

B

C

B

Access to
Infrastructure

C

C

A

B

A

Capacity building

B

A

A

A

B

EU-CELAC Energy SOM Working Group

Energy Research Areas	Topics
WIND ENERGY	<ul style="list-style-type: none"> - Advancement of small/medium-scale wind turbines in EULAC - Integration of wind generation into existing electricity grids
BIOENERGY	<ul style="list-style-type: none"> - Development of cost-effective and sustainable advanced bioenergy technologies with biomass feedstock flexibility - Cost-effective biomass availability, supply and storage systems optimization to reduce feedstock uncertainty for bioenergy production. - Assessing and monitoring the four dimensions of sustainability (economic, environmental, social and institutional) for bioenergy to ensure governance and compliance with biomass value chains sustainability goals.

Energy Research Areas	Topics
SOLAR THERMAL	<ul style="list-style-type: none"> - Solar technology development coupled to industrial heat processes - Energy Storage technologies :Thermal storage and Thermochemical processes
SOLAR PHOTOVOLTAIC	<ul style="list-style-type: none"> - Novel concept in cost-effective constructive systems based on solar technology in buildings and urban areas - Solar resource assessment
ENERGY EFFICIENCY	<ul style="list-style-type: none"> - Low temperature solar Thermal Energy including Solar thermal technologies for the built environment



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■ **Joint activities**

- Participation on ERANET Joint Call
(Deadline 27th Nov 2014)
 - **Small-scale self-sustainable biorefineries for multi-feedstock processing of agro-industrial and urban wastes for advanced biofuels, biobased chemicals and biomaterials.**
 - **Towards Zero Carbon Energy Systems for heating and cooling in industrial processes by means of solar technologies including the envelopes of the buildings.**



Coordinated activities: Joint calls and project based proposals

- Participation on ERANET Joint Call (Deadline 27th Nov 2014)
 - **Small-scale self-sustainable biorefineries for multi-feedstock processing of agro-industrial and urban wastes for advanced biofuels, biobased chemicals and biomaterials.**
 - **Towards Zero Carbon Energy Systems for heating and cooling in industrial processes by means of solar technologies including the envelopes of the buildings.**
- Appropriate instruments analyzed for coordinating and financing joint research, technology development and innovation activities.
- Dedicated coordinated support action in renewables/energy efficiency in support to the implementation of the EU-CELAC JIRI.
- In line with the objectives of the EU's strategy for INCO in research and innovation, enhance H2020 involvements as all activities are open for third country participants



Road map for future activities in 2014 - 2015

Mapping, analysis of country potential -critical mass of researchers and research organizations from both the private and public sectors and key information (1st phase) (LinKedIn); and current cooperation with European counterparts -irrespective of whether funded by the Framework Programme (exhaustive list of on-going relevant -national, regional and EU-LAC- STI programs, projects platforms (ETPs) with relevance to the thematic areas) (2nd phase)

Thematic expert workshop on Renewable Energies and Energy efficiency / Innovation (Spain) –

a) funding initiatives (twining of projects, other innovative financial tools for cooperation on renewable energies b) identify priority areas for cooperation in Energy supply

Strategic analysis for STI cooperation in the energy field by analyzing the current status of energy research based in their research base whether academic or industrial potential and interest towards international cooperation within key areas of bi-regional interest in energy to support the development of a strategy for cooperation in STI on energy issues between both regions.



Networking and exchanges

- Actions to promote and support networking and exchanges between research organisations in on-going or planned projects (INCONets and other projects like ACCESS to MEXCYT, INCONTAC, etc.)
- Further linkage with regional thematic nets (Rembio, Mesomaerican nets and CYTED) reinforced through an on-line tool through ALCUENet web.
- Synergies between ALCUENET, ERANet LAC projects and CYTED. First steps done through the 1st ALCUENET-CYTED Thematic Meeting on October 23rd, 2013. Draft proposals for joint working plan.
- Capacity building: Mobility programmes available for the exchange of EU-LAC scientists is being promoted seeking synergy with bilat-project activities as well as through other projects.
- Policy dialogue meetings and regulatory frameworks: The priority objective is to promote policy convergence between EU and LAC countries.



Long-term strategic proposals

- Development of long term strategic proposals to better linking research and technological cooperation structures and nets as a first step towards what, in the medium or long term, could become LAC Technological Platforms on renewable energies. Coordination of national research institutions and organizations from both the private and public sectors organizations is in the core of these initiatives.
- Networks working in renewable energies in LAC, including CYTED nets related to energy, already in the ALCUE NET list of stakeholders to build future structures of technological and research cooperation.
- Synergies between CYTED, ALCUENET and ERANet LAC projects. Draft proposals as the basis for a complementary joint working plan.

Thank you



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Working group leaders.