



Horizon2020 Information Days on Public-Private Partnerships

Brokerage event
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CARBON4CHEMICALS

Jose Antonio Gutiérrez Bravo

R&D Manager - Vertech Group

jose.gutierrez@vertech-group.com

Vertech Group

Vertech → French environmental engineering.



Capabilities in H2020 projects

- ✓ **Life Cycle Assessment (LCA)** Environmental impacts
- ✓ **Life Cost Cycle (LCC)** CAPEX and OPEX
- ✓ **Social Life Cycle Assessment (S-LCA)** Socio-economic impacts
- ✓ **Risk assessment:** technical, economic, environmental and social
- ✓ **Exploitation of results:** market analysis and business plans

13 International R&D projects
(FP7/H2020)



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R&D Manager

e-mail: jose.gutierrez@verttech-group.com

PROJECT IDEA – CO2VALUE

Objective

Develop innovative a set of technologies for converting real CO₂/CO to produce added value chemicals.

Key actions

- **CO₂/CO from a real capture system.**
- **Biological uses**
 1. Biorefinery → development to withstand real combustion flue gas.
 2. Ferti-irrigation: plant irrigation to increase plants growth.
- **Innovative Chemical conversion**
 3. Catalytic reduction - Artificial photosynthesis
 4. Innovative processes based on the use of energy. 2 technologies:
 - (a) CO₂/CO and water gasification + Fischer-Tropsch process
 - (b) electrochemical CO₂ reduction

Main innovative aspect

Use of real captured CO₂/CO

Validation of chemical conversion of CO₂/CO+impurities

Techno-economic systems development for design of industrial processes

SPIRE KEY COMPONENTS/ACTIONS ADDRESSED

1. **Feed:** alternative feedstock valorisation.
2. **Process:** Solutions for more efficient processing.
3. **Applications:** New processes and materials for market applications
4. **Waste2Resource**
5. **Horizontal**
6. **Outreach:** to industry (especially SMEs), policy makers, etc.

SPIRE RELATED TOPIC

SPIRE-08-2017: Carbon dioxide utilisation to produce added value chemicals

Scope: innovative chemical (e.g. catalytic) processes to produce added value chemicals from CO₂(and CO) and demonstrate the technical and economic feasibility

Expected Impact:

- Techo-Economic feasibility of novel processes for CO₂ and CO conversion to added-value chemicals.
- Reduction of at least 20%, on Life-Cycle-Assessment basis

Research and Innovation action

19 Jan 2017

EXPECTED IMPACT

- Technical validation of CO₂/CO + impurities processing.
- Demonstrate economic feasibility and social acceptance.
- Reduction of GHG and energy/resource intensity → LCA
- Increase of the industrial competitiveness to produce added-value chemicals.

EXISTING PROJECT CONSORTIUM

- Biomass research center
- SME LCA
- SME process modelling
and simulation
- SME Risk assessment

LOOKING FOR PARTNERS

- **Catalist developer**
- **Utilities**
- **Gas supplier**
- **Technology suppliers**
- **CO2 biorefinery
concepts**
- **Materials and gases
research organization**

CONTACT DETAILS

Dr. Jose Antonio Gutierrez Bravo
R&D manager



VERITECH GROUP

1, Blvd. Maître Maurice Slama // Calle Almagro, 25
06200 Nice CEDEX 4, France // 28010 Madrid, Spain
Tel: (+33) 0981096862 // (+34) 910228874

jose.gutierrez@veritech-group.com

www.veritech-group.com