Proposal Evaluation Form

EUROPEAN COMMISSION

Horizon 2020 - Research and Innovation Framework Programme

Fast Track to Innovation (FTI) pilot - Evaluation summary Report

Call: H2020-FTIPilot-2015-1
Funding scheme: IA
Proposal number: 720367
Proposal acronym: GREENERNET
Duration (months): 24
Proposal title: Advanced Flow Battery Energy Storage Systems in a Microgrid Network
Activity: EC Ranking

N.	Proposer name	Country	Total Cost	%	Grant Requested	%
1	GREEN ENERGY STORAGE S.R.L.	IT	1,028,500	38.23%	719,950	35.64%
2	AARHUS UNIVERSITET	DK	189,062	7.03%	189,062	9.36%
3	ENGINEERING - INGEGNERIA INFORMATICA SPA	IT	600,750	22.33%	420,525	20.82%
4	UNIVERSITA DEGLI STUDI DI ROMA TORVERGATA	IT	266,625	9.91%	266,625	13.20%
5	EVOPRO INNOVATION KFT	HU	605,312	22.50%	423,719	20.98%
	Total:		2,690,251		2,019,882	

Abstract:
The GREENERNET project will develop a new highly innovative organic redox flow battery, integrated in an optimized microgrid infrastructure operated by an intelligent Energy Management System. The redox flow battery is a promising technology for both medium and large-scale renewable and grid energy storage, but is limited by its high price, low energy density and poor stability of the electrolyte solutions (e.g. vanadium, zinc). Starting form an internally developed prototype of an energy storage system (ESS) of 1kW based on new organic AQDS (anthraquinone di-sulphonate), we will enhance and scale up this prototype flow battery into an innovative cheap (< €150 / kWh) and safe 10 kW ESS, integrated in a smart microgrid for distributed energy applications, with a significant improvement over the existing technology. We are focusing on the distributed storage and renewables integration for residential and communities' microgrids that represent a large market in Europe, that is estimated to grow with a CAGR of 35% from $ 0.7 billion in 2014 to $ 4.2 billion in 2020. The innovation of this action is twofold: • Develop and commercialize a storage system module of 10 kW, 40 kWh based on a breakthrough technology, originally developed by Harvard University and implemented in the 1kW battery prototype by GES and UTV, that relies on the electrochemistry of naturally abundant, inexpensive, small organic (carbon-based) molecules called quinones, which are similar to molecules that store energy in plants and animals. • Develop an innovative Microgrid Management Platform to optimize the use of the AQDS flow battery, able to monitor microgrid components (loads, energy sources, storage) and to continuously perform a multi-objective optimisation of the energy flows between them and the Power Distribution Grid whose requests will be taken into account by dynamically adhering to Demand Response programs. The Consortium revenue target is to reach € 70m by 2020 with a market share of 2%

Evaluation Summary Report

Evaluation Result

Total score: 13.34 (Threshold: 12)

Form information

SCORING

Scores must be in the range 0-5.

Interpretation of the score:

0– *The* ***proposal fails to address the criterion*** *or cannot be assessed due to missing or incomplete information.*

1– Poor. *The criterion is inadequately addressed, or there are serious inherent weaknesses.*

2– Fair. *The proposal broadly addresses the criterion, but there are significant weaknesses.*

3– Good. *The proposal addresses the criterion well, but a number of shortcomings are present.*

4– Very good. *The proposal addresses the criterion very well, but a small number of shortcomings are present.*

5– Excellent. *The proposal successfully addresses all relevant aspects of the criterion.Any shortcomings are minor.*

Criterion 1 - Impact

Score: **4.49** (Threshold: 4/5.00 , Weight: -)

Comments (relating to main weaknesses identified only)

More information on how the consortium partners will participate to and share in the commercial gains would have been useful.
Whilst the indication of key customers in specific countries is well noted, further differentiation between clients and end-user would have been appropriate.
Further ongoing competitive technology watch and freedom to operate analysis would have been beneficial.

Criterion 2 - Excellence

Score: **4.54** (Threshold: 3/5.00 , Weight: -)

Comments (relating to main weaknesses identified only)

The Micro Grid Management platform is not beyond the state of the art.

The proposal could have provided a more detailed analysis of the competing products.

Criterion 3 - Quality and efficiency of implementation

Score: **4.31** (Threshold: 3/5.00 , Weight: -)

Comments (relating to main weaknesses identified only)

Further details on the amounts budgeted for the various subcontracts, as well as for the other direct costs standing at 26% of the total budget would have been needed to adequately justify cost-efficiency.
The fact that the GES Board Member and Secretary of the Scientific Committee is also the founder and CEO of the identified ENG subcontractor Management Innovation raises concerns of possible conflic of interest.
The proposal does identify some implementation risks which are not appropriately analysed.

Scope of the proposal

Status: **Yes**

Comments (in case the proposal is out of scope)

Not provided

Operational Capacity

Status: **Operational Capacity: Yes**

If No, please list the concerned partner(s), the reasons for the rejection, and the requested amount.

Not provided

Exceptional funding of third country participants/international organisations

A third country participant/international organisation not listed in General Annex A to the Main Work Programme may exceptionally receive funding if their participation is essential for carrying out the project (for instance due to outstanding expertise, access to unique know-how, access to research infrastructure, access to particular geographical environments, possibility to involve key partners in emerging markets, access to data, etc.). (For more information, see the Online Manual)

Based on the information provided in the proposal, we consider that the following participant(s)/international organisation(s) that requested funding should exceptionally be funded:
(Please list the Name and acronym of the applicant, Reasons for exceptional funding and the Requested grant amount.)

Not provided

Based on the information provided in the proposal, we consider that the following participant(s)/international organisation(s) that requested funding should NOT be funded:
(Please list the Name and acronym of the applicant, Reasons for exceptional funding and the Requested grant amount.)

Not provided

Use of human embryonic stem cells (hESC)

Does this proposal involve the use of hESC?

No

If yes, please state whether the use of hESC is, or is not, in your opinion, necessary to achieve the scientific objectives of the proposal and the reasons why. Alternatively, please also state if it cannot be assessed whether the use of hESC is necessary or not because of a lack of information.

Not provided