

# Experiences of Horizon 2020 Energy WP 2014-2015

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## Introduction

Work Programme 2014-15 in the Energy Societal Challenge tried out some new things, notably the two-year format, greater competition between technologies, less prescriptive call topics and two stage calls for all RIA calls.

The RIA calls (Research and Innovation Actions – low TRL) in renewable energy technologies and storage technologies were particularly oversubscribed. Pent-up demand due to the relatively long gap between the last call in energy of FP7 and first call of H2020 and Member States pushing projects to Brussels because of a lack of national money were both offered as reasons. The latter of these problems might also originate in Brussels, as some research centres depend on regional funding programmes co-financed by the European Structural and Investment Funds. If the Operational Programmes that disburse the funds take longer to set up than the first Horizon 2020 calls, pressure is piled onto Horizon 2020. That said, the greatest contributor to oversubscription is in our view down to a third choice: loosely defined call topics, which enabled a great many ideas potentially to be eligible.

Two energy-related Work Programmes for the period 2016-17 are discussed in the second section of this paper, *'Draft Energy WP 2016-17 – some feedback'*: the 'Energy Societal Challenge' Work Programme and the NMBP Work Programme. The former addresses oversubscription by returning to FP7-style individual descriptions for IA topics and defining RIA topics with roughly twice as much text as in WP 2014-15. This may have the effect also of improving the quality of evaluations, which was a headache both for proposers and the European Commission, and is the focus of the first part of this paper, *'Evaluations'*.

## Evaluations

### The vicious circle of oversubscription and low-quality evaluation

Evaluations have been perceived too often to be of low quality. 'Superficial', 'subjective rather than objective,' 'inaccurate', 'criticising or praising the wrong things' – these are some of the things EUREC has heard about the Horizon 2020 Evaluation Summary Reports (ESR) from the 2014 LCE calls. The 'wrong' things are aspects that do not correspond to the proposer's own view of proposal's

strengths and weaknesses. We trust those who made this comment to have the experience to judge fairly.

One possible explanation is that far more proposals were received than the EC could deal with. Rules limiting the number of hours that one evaluator may work meant that less experienced evaluators needed to be called upon. In any case, their workload was judged to be high by one of the observers hired by the EC to report officially on the running of this year's evaluations. The person was following evaluations in competitive LCE topics and wrote, "In general longer time for remote evaluations is needed, especially when over 10 million € investments are in question. The time constraints are very high." They had two weeks for 12 proposals. The maximum length of a proposal is 70 pages.

If the EC is running short of genuinely expert evaluators, then it may need to spend more money, for example to advertise the opportunity to work as an evaluator, or to increase the honorarium they are paid. There is also possibly a zero-cost way to increase quality: exposing evaluators to feedback from their peers (suggestion in Box 1). This would be accompanied by more timely communication in year N+1 of the names of the evaluators who examined proposals in a particular Horizon 2020 theme in year N (the evaluators of energy projects from the 2014 calls were published only in September 2015).

Proposers would be given the opportunity to write 250 words to the team most closely involved in the evaluation of their proposal (probably those who have written the Individual Evaluation Reports) to tell them what they thought of their ESR. The identities of the team members would not be revealed – the message would be forwarded through the Participants' Portal without being copied to the Commission. The feedback would have no legal bearing on the evaluation outcome.

Evaluators would need to opt in to the process by ticking a box to agree to accept feedback.

A result of the feedback loop could be to cause some evaluators to reconsider how they approach their work. In extreme cases, evaluators who feel they receive a lot of justified criticism may choose to de-register.

**Box 1 Might adding a feedback loop be a low-cost way to increase quality? About the only way today in which evaluators can learn how to improve their work is to use the consensus meetings to compare their grasp of a proposal with that of their fellow evaluators.**

The danger of a low-quality evaluation round is that it changes bidders' strategies for future calls. If ESRs are perceived to contain incomprehensible or unfair comments, the Horizon 2020 selection process starts to look like a lottery, making the winning strategy from the proposer's point of view one where he churns out as many proposals as possible, compromising on quality if necessary. This overloads the prime evaluators and increases the number of evaluations going to the less experienced, meaning the quality of evaluation stays low and that the cycle is repeated.

With almost the same number of LCE 2 proposals in the 2015 call as in the hugely oversubscribed 2014 call, the EC is in danger of creating this vicious circle.

## Breaking the circle

### **Calls that are more focused**

Restricting the scope of the topic will reduce the number of proposals that may be submitted in response to it. This will make proposals more directly comparable. It will be less easy to submit a wide-ranging proposal and a narrowly focused one in response to the same topic, for example. Evaluators with more specialised knowledge will be needed.

### **Tougher first stage**

#### *Apply higher thresholds as the need arises*

Part H of the General Annexes to the work programme determines criteria, scoring and thresholds for first-stage proposals: 4/5 is the threshold for the two criteria applicable, which are excellence and impact. These thresholds are somewhat, but not hugely, stricter than the threshold for full (stage-2) proposals, where the minimum score is 3/5 in three criteria and 10/15 overall.

To winnow out more proposals at the first stage, the EC should consider whether, in cases of extreme subscription, a first-stage minimum score of 4.5/5 for impact and/or 4.5/5 excellence should apply. A lower pass rate for the first stage should allow the pass rate for the second stage to be increased. There is no reason why the raising of the threshold would need to be declared *ex ante*. It could be triggered under defined conditions. EUREC has heard evidence that in some 2014 calls, even in the absence of such a rule, the EC dropped heavy hints in its briefings to evaluators that they should be severe in their scoring in view of the very low number of proposals that will ultimately be funded. The process above would bring out into the open what is at present a veiled instruction.

#### *Feedback to proposals on improvements to make*

In Germany, proposals for energy projects are discussed between the consortium and the relevant ministry between stage 1 and stage 2. If the EC (or its delegated Agency) were to do the same thing, it would have far greater influence on the selection process than at present. This might not be such a bad thing, as the proposal could benefit from the experience of EC staff, who are now sidelined both through the delegation of work to agencies and the absence of a grant negotiation phase. There are ways to allow some advice to reach the proposers while keeping the process fair:

- The EC / Exec Agency would hold a meeting with representatives from successful stage-1 proposals (coordinator plus one or two more representatives from the consortium)
- The outcome of the meeting would be a note written by the EC / Exec Agency of the features that need to be incorporated in the second-stage proposal.
- The evaluators for the second stage of the proposal would be given this note. They would give a score out of 2 for an additional criterion: "Degree to which the second-stage proposal takes accounts of the EC's concerns". No minimum threshold would apply to this score, allowing consortia to disregard the EC's advice if they want.
- Proposals would thus be scored out of 17 (15 for the three usual criteria and thresholds reflecting the evaluators' view of the proposal + 2 for their judgement on whether the EC's suggestions are taken into account).

This process reverses the prevailing policy, which is to tell successful first-stage bidders the bare minimum about their evaluations, presumably to conceal the potentially awkward situation of the evaluators in the second stage taking a contrary view on the proposal to their predecessors.

The research community, the EC and the public rightly want a selection process that is transparent and immune from unfair and undeclared selection pressure. Whether or not you think the new process fatally compromises these requirements may depend on the tightness of the first stage evaluation. If it is loose, the second stage should consist also of utterly untainted competition. But if the first stage has been tightened, then the second stage can instead include the possibility of making a good proposal great. The idea above puts clear boundaries around the EC's room to interfere and limits through the weighting of the four components of the second-stage scores the bearing that the EC's views can have.

A further consequence of the proposal above is that the EC's review can (depending on what it contains) incentivise bidders to keep the second stage of their proposal consistent with the first stage. There is no mechanism in Horizon 2020 for ensuring this.

## **Draft Energy WP 2016-17 – some feedback**

### **Experimentation continues, with the new ideas likely to lead to improvements**

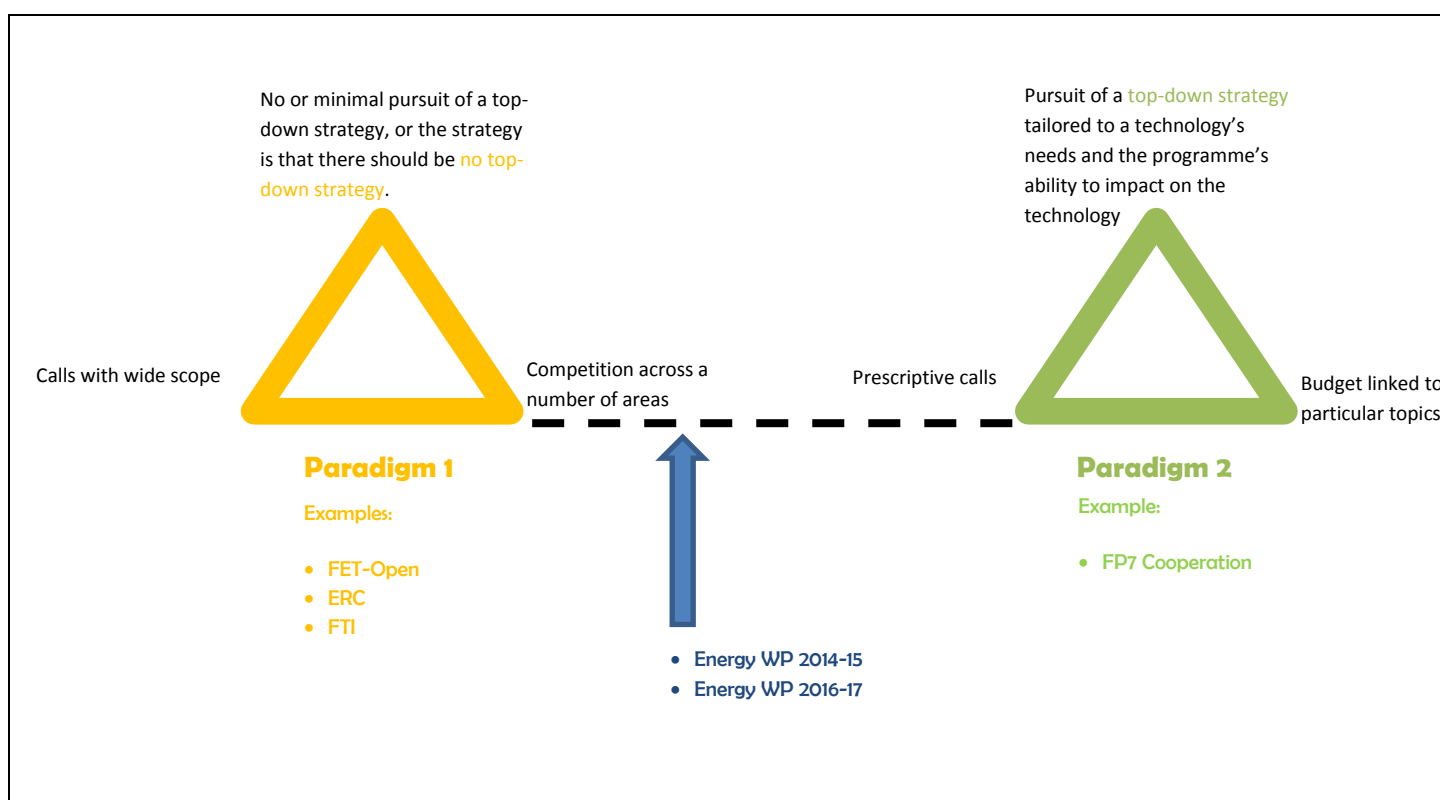
The experiments being run differ from H2020 budget line to H2020 budget line. Those responsible for the NMBP budget line are betting on greater use of two-stage applications, generalising this form of application from RIAs to both IAs and RIAs in the topics related to materials for energy. At the same time they are cutting the maximum length of the first-stage proposal from 15 to 10 pages. The idea is to reduce the workload and wasted effort of proposers. The NMBP programme achieved a success rate of 24% in the second stage of its 2-stage calls. Its managers judge that if the success rate for the second stage remains at at least this level, and that not too much effort must be put in at first stage, a very high first-stage failure rate is tolerable.

The rest of this section deals with new approach in the Energy Work Programme.

EUREC questions the value, during a time of experimentation, of locking in new philosophies for two years when they could be tried out in just one, allowing adjustments in the year that follows. The last Energy Work Programme did not give the EC the flexibility to fix flaws flagged up during evaluations, for example making IA and RIA proposals compete for the same budget. This made it possible for IAs to dominate a call related to storage in 2014 and RIAs to dominate a call related to grids in 2015.

### **More prescriptive – longer topic descriptions**

Innovation Action topics in particular are more closely defined in this Work Programme than in the last, being split into their own topic headings instead of lumped together in LCE 3. RIAs in low-carbon energy are spelled out in roughly twice the space as in the Work Programme 2014-15 (10-15 lines versus 6-8). These are both good steps and, as mentioned earlier, are likely to reduce subscription and improve evaluation quality. Prescriptive calls make sense as part of a set of complementary design features for a particular kind of funding instrument (Box 2).



**Box 2** Crudely-speaking two philosophies can be embraced in designing a funding instrument, here represented as Paradigm 1 and Paradigm 2. Each Paradigm contains at least the three mutually-supporting features that are represented here as the corners of triangles. Horizon 2020 Energy Work Programme 2014-15 is quite close to Paradigm 1, only the competition is limited by a rule restricting money flows to winning technologies to 25% or 33% of the total available. WP 2016-17 is also quite close to Paradigm 1: the limits on competition are removed, but the calls are prescriptive. EUREC would prefer Horizon 2020 'Societal Challenge' money to be spent in a more manner that is more 'Paradigm 2'. There has been an expansion of Paradigm 1-type instruments in the transition from FP7 to H2020.

## Two-stage calls abandoned in the Energy Work Programme

The reasons for abandoning them seem compelling: they added at least three months to the time-to-grant without sufficiently filtering the very best proposals from the rest. No advice on how to improve the first-stage proposals was given, so there was no public benefit, either.

It is claimed that two stages also imply greater cost in preparation and evaluation. Preparing a stage-1 proposal is over two thirds of the work to prepare a full proposal, one consultant has claimed<sup>1</sup>. If this is true (some EUREC members dispute the claim), the stage-1 failure rate would need to be truly brutal to make the two-stage procedure cheaper globally.

## Full competition between all RES technologies

Gone is the rule to limit the maximum that one technology can get from a call to 25%/33% of the EC budget available, which was the case in Work Programme 2014-15. The fact that the need to invoke the rule led to it being repealed makes it look like there was a collective failure on the part of the

<sup>1</sup> <http://sciencebusiness.net/news/77040/How-to-avoid-Horizon-2020-success-being-tarred-by-high-failure-rate>

Programme Committee to appreciate the rule's ramifications. The rule, or a similar one, is good to have if proposals covering a multitude of technologies are to be ranked together, which will again be the case in WP 2016-17 (with reference to Box 2 above, it will give more "Paradigm 2" character to the funding instrument, which EUREC would like). Greater acceptance of the rule in the EC and Programme Committee could, in our view, have been achieved if the various technologies that were bracketed under "renewable heating and cooling" had been allowed to stand alone.

### **Less rigidity on TRLs**

Relaxing the observance of TRLs (as the draft WP 2016-17 does) is a good thing. The table appearing just before the LCE 6 subheading is the right approach. Without specifying TRLs it shows what kind of research the EC mainly expects to see presented in proposals under each topic. For ex-post monitoring purposes, proposers could be asked in their proposals and again when their project (if funded) is complete to self-assess the TRL transitions made.

### **Balance of funding between IA and RIA**

AGE (Advisory Group on Energy) in its WP 2016-17 advice calls "urgently to reconsider the balance between the types of project supported and to increase research activities with medium to lower TRL levels in the coming calls." Anecdotally, EUREC heard that 80% of budget was on IA and 20% on RIA in the 2014 energy calls.

DG RTD has pointed to the practical difficulty in managing more and smaller projects due to staffing constraints in the H2020 executive agencies. Nevertheless, AGE's advice should be taken seriously, with packages of risk finance and intelligent use of European Structural and Investment Funds playing a larger role in the funding of cashflow-generating demos. FP7's risk financing tools have been updated for the H2020 era. InnovFin EDP, it is hoped, will finance projects that carry higher technological risk.

### **But: incomplete argumentation on priority**

The Energy Work Programme explicitly says that some technologies are higher priority than others. Yet what is not explained is the basis for the prioritisation. It doesn't seem to be technology leadership. September's SET Plan Communication, [C\(2015\) 6317](#), says on page 5, "Finally, European companies currently lead in resources specific technologies such as ocean and geothermal energy and concentrated solar power (CSP)" and on page 10, "Where the EU is currently world leader, such as in offshore wind, lignocellulosic biofuels or ocean energy, leadership should be maintained," yet neither of these lists (inexplicably different) fully maps to two lists given in the [Work Programme on page 74](#):

- “1. The highest priority will be given to support the next set of technologies that should be readied for cost-competitiveness and introduced in the market as soon as possible (off-shore wind, certain areas of PV, CSP, tidal and wave energy, and geothermal energy);
2. The next level of priority will be given to continue support those technologies that have started to reach cost-competitiveness but where continued efforts are needed to increase this, broaden it to the full sector, and build out the European industry position (on-shore wind, areas of PV, advanced biofuels, and solar heating and cooling);”

The argumentation in the Work Programme for the selected priorities is, for now, inadequate. A more robust defence of a particular order of priority might become possible once one of the first tasks given to ETIPs and the SET Plan Steering Group has been completed (commenting on EC Issues Papers). Admittedly the manner in which the prioritisation will be implemented in this Work Programme is very light, manifest only in whether a technology is called in one year, both years, or neither.

An opportunity officially to jettison technology neutrality in energy could come in the mid-term review of Horizon 2020. Acceptance of picking winners will foster acceptance more generally of the idea of pursuing well-steered top-down strategies for nurturing technologies, leading to renewed importance of stakeholder-compiled research priorities.

## **Energy calls 2014 – some feedback**

EUREC's members have appreciated

- a) the reduced administrative burden of proposal submission thanks to online tools (possibility to submit proposals with only one signature to confirm the LEAR)
- b) the 1:1 mapping of the downloadable proposal template with the criteria against which evaluators evaluate. This approach helps them to focus on what matters in the evaluation.