ART FUELS FORUM REPLY TO QUESTIONS OF THE PUBLIC CONSULTATION ON THE ESTABLISHMENT OF THE INNOVATION FUND

GENERAL INFORMATION ABOUT RESPONDENT

***1. In what capacity are you completing this questionnaire?**

In your professional capacity or on behalf of an organization.

On behalf of ART Fuels Forum, (AFF) an informal 'ensemble' of stakeholders and experts (approx. 100) representing (i) the European Alternative and Renewable Transport Fuels (ART Fuels) production industry, (ii) the transport consumption industry, and (iii) the main international cooperation actors. AFF collaborates with EU policy makers and stakeholders.

***2. Please indicate your First name:**

ART Fuels Forum

***3. Please indicate your Last name:**

GENERAL INFORMATION ABOUT RESPONDENT

ART Fuels Forum

5. Contact email address:

artfuels@exergia.gr

***6. For individuals, please indicate your country of residence, for professionals, please indicate your main country of operations/headquarters:**

EU

***9. To which category of stakeholders does your organisation belong?**

a) Potentially directly benefiting from the initiative (energy intensive industries, in particular steel, iron, aluminium, copper, oil refining, chemicals & bio-based industries and pulp & paper, cement, lime, glass & ceramics, renewable energy generation and storage, and industries/power plants utilising CCS/CCU

***10. Please indicate your preference for the publication of your response on the Commission's website:**

Under the name given:

I consent to publication of all information in my contribution and I declare that none of it is subject to copyright restrictions that prevent publication

ELIGIBILITY CRITERIA

11. Which are the five most important highly innovative technologies in your view that will be key to decarbonise the industry and power sectors in the EU and therefore need to be demonstrated over the coming decade?

ART Fuels Forum wants to express firmly that a substantial share of the available funding under the Investment Fund should be allocated to technology innovation in the OIL REFINING and RENEWABLE and low carbon, waste fossil-based ENERGY targeting the TRANSPORT sector. Unlike in other sectors, the greenhouse gas emissions in the transport sector do not show a clear downward trend. We view the following technologies as most important and highly innovative options that require substantial support in the coming decade to decarbonise transport:

- Advanced Biofuel production technologies, for biofuels used in road, air and water-based transport (biochemical, thermochemical, HVO production)
- Renewable Power to liquid and/or gaseous fuels (P-to-X or electrochemical conversion)
- CCU/CCS including Bio Energy Carbon Capture and Utilisation technologies
- Integrated Biorefinery technologies, providing products to both the energy, fuel and/or chemical and materials markets, including processing for the above purpose
- Co-processing

12. To apply to the Innovation Fund funding, should eligible technologies be defined?

a) Yes: Based on a pre-defined detailed list of eligible technologies per sector (as described in the introduction above), with a possibility of regular update (e.g. every 5 years);

ELIGIBILITY CRITERIA

13. To ensure that the Innovation Fund would support innovative but realistic projects (i.e. those that would effectively materialize and reach market maturity), should its eligibility criteria set deadlines for reaching specified milestones?

Yes

14.The revised ETS Directive agreement stipulates that small-scale projects can also be supported. To better define the scale of small-scale projects eligible for support of the Innovation Fund, should eligibility criteria set a minimum size for small-scale projects?

No

15. If you wish, please provide additional comment(s) in more detail, focusing on elements related to eligibility criteria not mentioned in the answers above.

ART Fuels Forum believes impact is the key, i.e. project times the replication potential. We should consider that this also deals with other industrial sectors.

ART Fuels Forum wants to add that in the area of Oil Refining and Renewable or low carbon waste fossil-based Energy focusing on the transport sector, scale is of importance to cost. This may be different in other sectors (e.g. chemical sector). Scale is not only about the size of one plant. Scale can also be viewed as a large number of decentralised small-scale systems, bringing high overall efficiency and viability as well. Setting scale limits for TRL below 7 should be avoided. Sustainability should be an eligibility criterion

TYPE OF SUPPORT

16. Should the maximum funding rate (i.e. up to 60% of relevant costs covered by the Innovation Fund as stipulated above) be:

a) Variable depending on the stage of technology development (and related technology risks)

17. Which form(s) of support should the Innovation Fund provide?

17.1 Which form of support do you consider most appropriate in relation to the stage of development? Please rank from 1-5 (5 being most appropriate).

	Pilot production and demonstration (TRL 6-7)*	*Initial market introduction (TRL 8)*	*Market expansion (TRL9)*
Investment subsidies (grants)	**5**	**4**	**3**
Risk guarantees	**4**	**5**	**4**
Loans	**1**	**5**	**5**
Equity	**1**	**4**	**5**
Other (specify)	**2**	**4**	**1**

**Technology Readiness Level*

17.2 Should eligible projects have a possibility to combine the above forms of support during the

TYPE OF SUPPORT

projects' lifecycle? Please specify and provide more detailed explanation for your answer above.

Yes, in the view of ART Fuels Forum it should be possible to combine different forms of support, inside and outside the IF, during the different stages of project development. The less mature a technology is, the more it may have to rely on grant support as it is not fully bankable, and may not have the capacity to deal with loan services at all. More mature technologies (approaching TRL9) may benefit from loan guarantees often provided by a commercial lender which familiarizes itself with biofuel projects, and can then engage on a broader basis at later stage.

From the perspective of the IF, loan guarantees cannot be the only support mode, as ideally, guarantees should not be called on, and then the IF would not spend any of its moneys. There has been a discussion if the IF should "perpetualise" itself by providing loan funding, and where repayments and interests would finance new projects at later stage. However, the stakeholder report seems to not be in favour of such options, as this could only be for a fraction of the support, if really innovative projects are to be considered.

17.3 Should the Innovation Fund also provide specific project development assistance? If so, please rank the relevance, according to your assessment, of pre-feasibility studies, cost-benefit analyses and related work-streams, human capacity building and others (4 being most important):

Technical pre-feasibility studies

Financial analysis and plans

Capacity building

Others

18. Up to 40% of the Innovation Fund support may be pre-financed, provided that pre-determined milestones are attained. In your view, how should such milestones be defined?

c) Other

19. What are in your view the most important lessons learned from the monetisation of NER300 allowances / key aspects to be considered when deciding about the modalities, in particular the timing, of monetising the allowances available for the Innovation Fund?

ART Fuels Forum recommends to include the insights and analysis from the NER300 memo that was drawn up by the SUB Group Advanced Biofuels in 2016 and 2017. The memo is providing via the upload facility at the end of this questionnaire: summary of recommendations:

1. Support should not be limited to the operational phase but also be provided during the design and construction phases of a plant. This reduces early-stage risk exposure for developers.

2. Include budget for executing detailed feasibility studies (including the level of engineering required to achieve +-10% costs estimate to secure financing) for first-of-a-kind plants. This can entail costs up to several hundred thousand Euro. Support should be provided under separate tier for promising technologies that have been proven at demonstration scale either via FP7 or H2020 or national and corporate funds and prepare applications for such a call. This ensures a common quality standard for the selection of investment projects and build-up of knowledge to the financing entity

3. Technology development has its own pace and it doesn't follow the pace of either the

TYPE OF SUPPORT

Commission or EIB. Design, a more flexible call system or better an open call

4. Do not judge only on short term performance criteria as this may exclude certain technologies. Innovative technologies that have a attractiveness on long term might be excluded too early due to the high technology risks and as a result high cancelation risk.

20. If you wish, please provide additional comment(s) in more detail focusing on elements related to the type of support criteria not mentioned in the answers above.

See Section ADDITIONAL COMMENTS

APPLICATION AND SELECTION PROCEDURE

21. How should the application process be organized?

c) other

22. How many stages should the application process have?

b) two-stage process consisting of expression of interest (based on a less than 10-page concept note) followed by the screening of pre-selected applications (based on complete project proposals)

23. What should be the optimal mix of project selection criteria, taking into account the key requirements set by the ETS directive? Please rank in the order of importance (0 being least important).

	Ranking (0 - 6)	*Comments (if non put N/A)*
Innovativeness	*4*	*N/A*
Decarbonisation potential / contribution to emission reductions	*5*	*This is the mission of the ETS*
Expected performance (i.e. Cost per unit of performance)	*2*	*Performance of a first of a kind plant is highly influenced by local conditions and setting (e.g. infrastructure already available etc.) and is not a true reflection of long-term technology potential*
Project viability/ bankability/ robustness of the business model	*5*	*From the experience of NER300, up to date only 5 of 42 projects have materialised. The likelihood of the project realization should have a strong impact, i.e. getting to the start of construction.* *But economic viability is a very blunt instrument for selection. Without viability or bankability no investment, but even in the case of making the investment, the viability is not guaranteed and only comes after years and years. There are also aspects such as the coherence of the consortium, technical risks, sharing of responsibility, capacity to directly and indirectly raise funds etc. -. that leads forward to an investment decision.*

APPLICATION AND SELECTION PROCEDURE

Cross-sector spill-overs / cooperation	*4*	***Relevant to include***
Scalability/ potential for widespread application	*5*	***N/A***
Other, please specify		

24. Should there be a mechanism to ensure a balanced portfolio of projects?

c) yes, with regard to sectors and technologies

25. If you wish, please provide additional comment(s) in more detail focusing on elements related to the selection procedure not mentioned in the answers above.

See Section ADDITIONAL COMMENTS

RELATION TO THE OTHER FUNDING INSTRUMENTS

26. In your view, how should the Innovation Fund complement other funding mechanisms at the EU and national level?

See Section ADDITIONAL COMMENTS

27. In your view, could the Innovation Fund avoid overlaps with other funding instruments and if so, how this should be done?

See Section ADDITIONAL COMMENTS

28. In your view, how unnecessary administrative burden for applicants could be avoided? Please specify.

See Section ADDITIONAL COMMENTS

29. If you wish, please provide additional comment(s) in more detail focusing on elements related to financing synergies not mentioned in the answers above.

See Section ADDITIONAL COMMENTS

ADDITIONAL COMMENTS

The comments below are provided by ART Fuels FORUM to the Questions according to their numbering in the questionnaire document. Where appropriate specific comments by anonymized members is added as well.

Question 11:

On top of the information we provided in the answer box in the questionnaire itself, we have received the following additional comments from ART Fuels Forum Members:

Member A: The technologies we see that can be most impactful in reducing GHG emissions from industry combine aspects of waste utilization (CO_2, Cellulosic biomass, Municipal waste) for the

ADDITIONAL COMMENTS

production of fuels and chemicals. Technologies to convert municipal, industrial, agricultural or forestry wastes to low-carbon fuels (methanol, ethanol, DME) and chemicals. Acetates and acrylates in particular have an enhanced capacity to capture waste carbon in the molecules. These materials are in significant demand and can be made from biomaterials but are currently sourced mainly from fossil materials. There is also a need to move away from traditional fossil chemistries for production as they are built around pure hydrocarbons and focus more on oxygenated substitutes that are more amenable to production from biomass.

Question 12:

we have indicated option (a). We would like to propose those options eligible that are consistent with the definitions provided in the SGAB report:

- Advanced Biofuels are those produced from biomass (biomass, as defined under RED or any amendment to it) other than food/feed crops while meeting the EU sustainability regime (Sustainability regime as defined under EU legislation) under the legislation in force (Existing legislation in force at the time of consideration).
- Advanced Renewable Fuels are advanced biofuels, and, liquid and gaseous fuels produced from renewable intermediates or renewable process by-products (H_2, CO, Co_2 etc.).
- e-Fuels are Advanced Renewable Fuels produced from renewable electricity via electrolysis.
- Low Carbon Fossil Fuels are liquid and gaseous fuels produced by the conversion of exhaust or waste streams of fossil fuel/resources in industrial applications via catalytic, chemical, biological or biochemical processes.

ART Fuels Forum proposes to have at least 2 updates of the list of eligible technologies per sector. The argument for this is: The 4th ETS phase is only running 2021-2030, so a regular 5-year update does not make much sense.

Should eligible technologies be named, or should other criteria be use e.g. product oriented "transport fuel with > 70 % GHG reduction". This would enlist biofuels and PtX in the same category. Any carbon saving is caused by the renewability character and share of the energy carrier. ART Fuels Forum wants to stress that in this sense the carbon origin of any CO_2 being used is irrelevant.

Technologies could be named, but some as aTRL89 category to receive certain funding and some as TRL6-8 receiving other type of funding support.

Comment to Question 21, argument for choosing option c):

ART Fuels Forum prefers open calls with cut-off dates instead of a limited number of Call for Projects per annum

Question 13:

ART Fuels Forum would suggest using a combination of fixed milestones, that can be ticked off, and a judgement that progress is being made by e.g. a peer evaluation of the project development; is engineering actively pursued, is there procurement solicitations or negotiations on-going, is issues from permitting authorities addressed, what staffing numbers are engaged. etc. should verify that the project, even if not completing a milestone on time, or in a period absent of milestones, still has momentum.

We believe that this is how the loan guarantee tranche system works, you meet some milestones and a peer review states you met the criteria so you get funded for the next phase. For the period

ADDITIONAL COMMENTS

waiting for final investment to the start of major spending's, payment instalments and recovery options could be used to that dead projects are seemingly alive.

Question 14:

We would like to suggest that the project size/eligibility criterion is reasonable for better management of the IF and that priority should be placed for projects of significant GHG reduction output or impact.

Question 15:

Member A: Commercial-scale projects employing innovative technologies that are not in general use in the EU (see details in Q. 29) should be eligible. The principal challenge facing commercial take-off of innovative technologies is financing for the first few commercial scale projects, as still considered by traditional lenders as higher risk. Public financial support (grants/loans/loan guarantees), which could stimulate private investment by de-risking the project, is lacking.

Question 16 :

ART Fuels Forum has selected option a). The NER300 programme provided funding for a period of time in proportion to product output. During project development and for the Final Investment Decision NER 300 did not give any alleviation for the technical or market risk exposure prior to the regular production phase. Many projects selected under NER300 lacked the fund support - i.e. they were not sufficiently rewarding or bankable in view of technical, market and policy risks - to come to construction. Hence, these project, although selected after an evaluation by the EIB, would never reach the regular production phase and 'collect' the NER300 funds already allocated to them.

An improved IRR and sharing risk in early stages would have a more supportive impact. Examples of such instruments are (i) direct grants, (ii) loans provided with no or less collateral security as compared to senior loans or parent bond security, or (iii) back-to-back loan guarantees for senior debt.

Question 17:

Comments to table in 17.1:

This table aims to tackle many financial issues in one frame, as such diluting the difference of types of organisations searching for investment instruments and the background/role of the organisation applying for finance.

Some companies can finance projects on their own balance sheet if need be and can provide senior security in for loans and bonds based on other assets than the project and can support operations by external cash flow. Other enterprises do not have any such assets, they can only provide security in the project, and loan services becomes more expensive for this reason. A third company expands its equity base, but that dilutes the control and the reward to the original developers but raise the potential for doing projects.

Furthermore, the outlook for these is different if you are a technology provider, EPC or license, or is the end customer of a technology provider or have a build- own-operate strategy as many developers have.

With respect to the "Investment subsidies (grants)" item in row 1 of the table: Unless the state-aid rules change, the support (aid) intensity allowed goes down as technology matures, and aid impact

ADDITIONAL COMMENTS

as market distortion possibly increases. However, a grant, even if small, can be seen as a public endorsement that may influence others

With respect to the "risk guarantees"' item in row 2 of the table: It is not really clear which risk is guaranteed: investment, output, market value of product? Will it also vary between the TRL level of a reviewed project? Should it be seen as a loan guarantee?

With respect to the 'Loan" item in row 3 of the table: A traditional loan is probably more important as one moves up the TRL ladder as it comes with normal demands for security and payments. Loans for a pilot plant, using it as a security on affordable conditions, is really not available without mother company guarantees. So, if available, a soft loan on reasonable terms would reduce liabilities and be a strong support as a complement to own financing, if available. For higher TRL e.g. 8-9, support as loans on commercial conditions would just substitute commercial loans, unless there is a syndication such that security-wise, public loans stand second in the line in terms of securities and loan services relative to commercial lenders.

With respect to the "Equity" item in row 4 of the table: Equity means that you set up an SPV at arm's length for mother companies, i.e. even if supported by equity injection it may affect loan security evaluation. Equity increase the capital available for operations and projects but also means loss of control and increasing the balance sheet such that demands for return on the capital used increase. What would the strategy of the public equity holder be? Passive but long-term, trying to get dividends to recover capital injection. Strategic, would participate in future ventures to recover less return in the first one. Looking for a 3-5 year exit when project is generating revenue. Could such an equity holder sell at loss without putting the project in jeopardy for receiving illegitimate state aid.

ART Fuels Forum would like to add another form of support:" Support for extended commissioning": Projects that are successfully built, but do not generate revenues as expected will be drained on operation capital within a few months How can these projects be supported?

ART Fuels Forum would like to add even another form of support: providing guarantee off take of products.

Remark by ART Fuels Forum Members:

Member F: I believe another way to use these funds is to guarantee off take of the product. Capex only contributes a relatively small percentage to overall cost of the final product while the plant is in operation. But certainty of off-take is key for investor confidence. A capex grant does not really contribute to the business case from an investor point of view. It is usually the cherry on top. A longer term, stable off take is much more important. It will basically make or break any business case. Once you can show (as project developer) that you have access to feedstock, guaranteed off take and a technology platform at the right level of maturity it will not be difficult to raise the needed investment (i.e. there is no shortage of money in the world). A system like auctioning of product volumes/CO_2 savings at a certain stable off take structure is highly attractive from a development point of view. Example:

The Innovation Fund issues a tender for SAF production capacity, specifying, X tons of SJF per year, Minimum x tons of CO_2 reduction, Sustainability criteria, Amount of jobs and etc.

Market consortia submit proposals. Consortium that meets the criteria and has the lowest price gap vs best carbon savings (i.e. least accumulated additional costs over 10 years) wins the tender. This in turn enables commitments from off takers and investors.

ADDITIONAL COMMENTS

Question 17:2:

Additional remarks by members:

Member A: Yes, projects with higher TRL should have a portion of the support offered as a grant or risk guarantee and a portion of the support offered as loan or equity in order to maximize the impact of the fund by using it as leverage to stimulate private investment.

Member B: Projects should be able to combine the different forms of support. However, it should be noted that there is a clear preference for grants over e.g. loans which applies to most larger companies applying International Accounting Standards (IAS). Due to the IAS, loan money cannot be utilized to increase actual R&D spend. Loan is not visible in the Profit and Loss Statement (P/L). R&D is part of Selling, General and Administrative (SGA)costs and P/L. (i.e. R&D is shown in income statement, loans again in balance sheet.)

In addition to this problem related to accountancy;

- At least for larger companies, it is usually not a problem to get a loan. Therefore, loans are available without R&D instruments, and usually with interesting interest rates.
- If the project fails, the payback is too far away, from big a company financial point of view it is not possible to take into account in R&D budgets anymore.
- Usually, small loans will not be considered even if they could be used due to bureaucracy

Member C: Yes. If there is a possibility to take a breakthrough technology faster to market, there should be an option allowing a fast transition from piloting up to a first-of-a-kind unit. This option should be considered if specific projects qualifies for it.

Member E: Yes, I'm fully supportive to flexible schemes. The ranking numbers I gave above are kind of reflecting that possible mix

Question 17.3:

ART Fuels Forum support the remark that the Innovation Fund should provide project development assistance. The overall available funds, as well as funds available per project, should be capped to reasonable numbers, in relation to the overall. This is an exercise where financiers and developers engage in building trust and for the financiers also means learning. Once a final proposal is presented, a proper QA background in the decision basis can be ensured for a peer review.

ART Fuels Forum rates 'Technical pre-feasibility studies' and 'Financial analysis and plans' as most important. 'Capacity building' (operator training, travels to reference installations etc.) can be linked to the investment phase but paid by grant share to a budget.

Remarks by ART Fuels Forum Members:

Member A: We believe that the focus should be on project delivery/implementation, but that some engineering costs should also be eligible. The greater challenge around innovation is getting projects funded and built and thus, the funding should be dedicated to supporting delivery though an investment into the project costs (equity, debt, subordinated debt etc.)

Question 18:

From a cash flow perspective, the best value for pre-financing is that it should follow actual spending. But financial close will be shortly before first procurement (not only of parts but also of other commitments e.g. EPC contract), physical construction finalized is the starting point for cold

ADDITIONAL COMMENTS

commissioning, so these two types of milestones are not really that different. From a supervisory view, financial close does not necessarily mean immediate start of construction and procurement, so contractual commitments may be preferred.

Additional remarks by ART Fuels Forum Members:

Member E: Most of the money should flow as soon as investment starts, i.e. upfront start of construction

Question 19:

Additional remarks by ART Fuels Forum Members:

Member A: Specific construction phases are most closely associated with disbursement of project costs and are thus the most appropriate for triggering pre-financing payments. This also avoids financing projects that never break ground.

Member E: Too much money had to be invested with full risk

Member F: A weak point of the NER300 was that business cases that had a positive NPV without the support were not eligible for funding. This way only the "bad" business cases could be send in. This is highly unattractive from an investor point of view, as support is usually seen as addition to the case, but the business case should also work without support/subsidies. For this new program I reckon you want to support the winning cases (which have a hard time materializing anyway) instead of focusing on cases that have no real potential at all.

Question 20:

Additional remarks by ART Fuels Forum Members:

Member A: The objectives of the NER300 program were appropriate but it is important that funding be disbursed throughout the project implementation period (not just at the end) or many projects will not be able to reach completion. The high project failure rate highlighted the challenges that exist when looking to deliver innovative projects. Unused capital should be recycled into other projects if a given project fails. This is also a good reason for focusing the fund on the engineering and delivery phases – if the capital is available to fund projects from engineering through to end of construction, development risk can be largely avoided and investment is only made once due diligence is complete

Member B: Do not specify and hence limit technologies to acceptable and non-acceptable in advance. All winning technologies 10 years from now cannot be known yet. E.g. in NER300, steam explosion was not applicable for bio-coal production, because torrefaction process was prescribed as the only acceptable technology. Retrofit cases should be acceptable in addition to green field vases (as long as there is something innovative included in the retrofit. Integration of different solutions is of importance. New Biorefinery concepts and flexible solutions that can be integrated into existing mills and plants.

Question 21:

Remarks from ART Fuels Forum Members:

Member B: following the selection for option C: Rolling applications should be the basis, but funding divided to 2-3 sub-periods in order to avoid a situation where all the money would be allocated during first years.

ADDITIONAL COMMENTS

Member D: Based on personal experience with NER300 and other funds, one of the main issues I see with these programmes are the 'fixed deadlines'. You cannot force innovation to comply with bureaucratic deadlines. Fixed dates also attract opportunistic consortia, applying in an attempt to secure funds. This happened with NER300 and the experience was that most of these projects never made it to reality. Ideally you want to be able to apply for funding if and when you have an innovative idea.

Question 22

ART Fuels Forum recommends to design a two-staged application process. Special attention should be given to an evaluation of the claims made in the first stage, to prevent well-marketeered project without substantial 'evidenced' information and claims proceeding to the next phase. Therefore, the first stage should require sufficient effort from the submitters to provide appealing evidence to any claims on performance and technology and market operation. The selection process should be thorough enough to prevent projects that lack such evidence-based claims entering the second stage. In the past there was a tendency to provide full contracts and funding at an early stage of a project, without further engagement during the follow-up phase. We would propose to learn from the US-system where projects have to prove that they can come to a next stage, before funding, earmarked for their project, is released.

Question 26:

Remarks from ART Fuels Forum Members:

Member A: There are various programs for getting technology started in labs, moved from labs to pilot scale and then progressed to demo scale. The gap is mainly demo to first commercial and then first commercial to fully commercial, recognizing that the first plant is often not optimized and further improvements are made to subsequent plant designs

Member C: Might be a very interesting mechanism if this system could allow to complement more fundamental academia level work.

Member E: Depending on TRL other specific funds would be helpful for the project development

Question 27:

Remarks from ART Fuels Forum Members

Member A: As mentioned, there is very little funding available to support innovative technology projects in the gap from demo to first commercial and then first commercial to fully commercial. This program could avoid overlap by focusing or at least accepting projects at higher stages of technology readiness, including the first few commercial applications of a given technology (as long as there are optimizations in each iteration).

Member C: I am not entirely sure of what is available but solving the problem of the Death Valley is something important in technology

Member E: It is difficult to give a general opinion. It very much depends on the individual projects. However, full transparency is a pre-condition. If not fulfilled, penalties have to be defined

Question 28:

Remarks from ART Fuels Forum Members

ADDITIONAL COMMENTS

Member A: Two-stage application process. Avoid lengthy reporting requirements – reporting requirements should be limited to bi-annual tracking against quantitative metrics established in contribution agreement, supported with brief qualitative comments.

Member B: with a two-stage selection procedure and with rolling applications.

Member C: Create a specific entity that will only deal with this matter at the government level

Member E: Especially for the first 40% minimal reporting should requested and pre-defined steps with minimal reporting details. Reporting to the Commission and to the financing institute should be synchronized and if ever possible be identical.

Question 29:

Remarks from ART Fuels Forum Members

Member A: This program should fill the gap that exists for financing the first few commercial-scale facilities employing innovative clean technologies. Commercial-scale projects employing technologies that are not in general use in the EU be eligible for this fund. This is the case for the successful US Department of Energy loan guarantee program for innovative technologies which is eligible for technologies that have not yet been installed in and used in 3 or more commercial projects in the US for a period of at least 5 years.

Question 30:

Remarks from ART Fuels Forum Members

Member A: The EC's "Inception Impact Assessment" correctly noted that support for low carbon innovative technologies has so far enabled their demonstration but not their de-risking and commercial take-off. The principal challenge facing take-off at commercial scale is financing. The first few commercial projects are considered higher risk by traditional lenders as technology is less mature and/or first commercial facilities are still being optimized and reaching production targets. Public support (grants, loans or loan guarantees) to stimulate private investment is lacking for early commercial roll-out. Support is needed throughout the entire "valley of death" including early roll-out, as was highlighted in the Summary Report of expert consultations published June 2017. To address this challenge, we strongly recommend that commercial-scale projects employing innovative technologies that are not in general use in the EU (fewer than 3 projects operating since 5 years) be eligible for this fund

Member B: Funding should be available also to more developed technologies, not only to the first of a kind technologies (on condition that these cannot yet be considered mature). Funding should be given in the form of grants. Technology risk of technology providers should be mitigated by funds as well, not de-risking plant owners only.

Project Management of ART Fuels Forum

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