

# EFFECT PROJECT

Creating effects through communication  
and engagement in Future and Emerging  
Technologies

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## D2.3 Definition of Criteria for Scientific Evaluation

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## Technical references

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*PU = Public*

*PP = Restricted to other programme participants (including the Commission Services)*

*RE = Restricted to a group specified by the consortium (including the Commission Services)*

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## Executive Summary

The EFFECT project will develop dedicated communication formats covering most innovative and media-appealing results from FET projects exploiting the web, social and TV media to enhance visibility and impacts of FET research in society as a whole. The goal of WP2 is to provide contents to the editorial management strategy of EFFECT.

The present Deliverable D2.3 “Definition of Criteria for Scientific Evaluation” describes the methodology adopted by the Advisory Board to provide an evaluation of the FET projects and their results to be communicated via EFFECT.

The EFFECT consortium carried out a first extensive analysis of H2020 and FP7 projects through a initial desk research activity and the realization of direct interviews with FET project coordinators, looking at projects’ results and achievements in order to unleash the best messages and contents to be communicated to the general public, highlight the project potential in terms of breakthrough innovation and scientific excellence and raise visibility on the FET Programme’s opportunities and spirit.

The projects, which accepted to be communicated through the first screening phase (see D2.2) have been ranked on the basis of their correspondence with specific Evaluation Criteria.

The Evaluation Criteria deal with media interest and relevance to a lay audience of the projects’ goals and results, visual potential and attitude towards communication as well as scientific and technological aspects of the FET funded projects.

The Advisory Board set up by EFFECT Consortium has supported the consortium in validating the FET projects’ analysis providing valuable inputs, based on their scientific background, to communication contents, guidance on the most relevant issues to be considered when developing EFFECT communication and engagement activities.

The EFFECT Advisory Board is composed by ten world-class experts, dealing with different domains covered by FET funded research. The Advisory Board has provided an assessment of the projects, which have accepted to be communicated via EFFECT, and a guidance to the selection of their research results according to scientific and other criteria, such as innovation, EU excellence, market exploitability. The Advisory Board’s inputs will support the consortium’s final selection process and the identification of those projects to be communicated in various formats and through different channels. The assessment of the projects was individually performed by each expert and the overall results were shared and discussed during the Advisory Board meeting held in Rome on June 22<sup>nd</sup>, 2017. The results of the assessment and selection process by the Advisory Board and the consortium partners will be reported Deliverable 2.4.

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# 1 About EFFECT

EFFECT is a H2020 project funded under the FET Programme aiming at enhancing visibility and impact of FET research among a variety of actors (researchers, industry, policy makers, civil society organisations, citizens etc.) and to stimulate debate and collaboration among multiple stakeholders through dedicated community building and public engagement activities.

## 1.1 Objectives

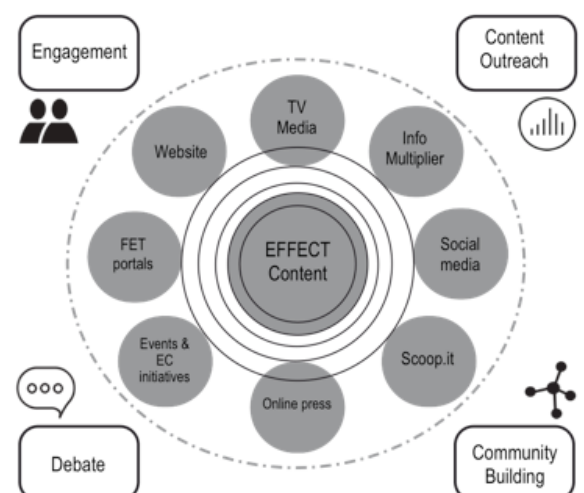
EFFECT strategic goal will be attained through the achievement of the following four specific objectives:

1. enhance knowledge transfer and raise visibility on FET funded research in research and innovation ecosystems, marketplace and society
2. foster innovation potential awareness of FET funded research in business community and policy makers
3. support the creation of a collaborative research and innovation framework by a set of public engagement activities
4. enhance communication strategies of high risk research

To achieve the project objectives, the EFFECT consortium mobilized an Advisory Board formed by experts of the different domains covered by FET funded research. The Advisory Board has provided guidance to the consortium in selecting research topics, applications and best communication contents and channels to be used according to scientific and other criteria, such as innovation, European excellence, market exploitability, public engagement open opportunities as well as in a view of Responsible Research and Innovation.

## 1.2 EFFECT content-centric Approach

EFFECT content-centric approach aims at identifying and selecting FET stories that are most interesting to be communicated towards different stakeholders, here including the general public, in videos, articles and interviews and to be used as a source of debate and participation on the basis of the most interesting items for the targets of EFFECT communication and engagement activities. This is the reason why the screening and assessment of contents and results from FET projects and their validation through the Advisory Board performed in WP2 represents a milestone for the EFFECT project.



## 2 Content provision

One of the main challenges of EFFECT project is to transform the results from the entire range of FET projects and activities often of a very technical and complex nature and with a long-term application perspective, into information matching the understanding skills of the large audiences.

EFFECT adopts a broad approach to identify the “good stories” that might be of interest for different stakeholders categories and the broader public: the media that reach out to the general public, stakeholders, representing the direct and indirect beneficiaries of the FET research achievements, investors, who can guarantee the market uptake of the FET research outcomes, students and young researchers who can learn from FET results and continue to enhance future scientific excellence as the basis for future European competitiveness and growth.

The aim of Work Package 2 “**Content provision**” is to define the editorial management strategy of FET projects’ contents, in order to unleash their communication and impact potential, stimulate debate and engagement and support the translation of the FET visionary thinking into concrete and more understandable scenarios.

The overall content identification process has been supported by the Advisory Board, a project constituency composed by ten FET world-class experts aiming to provide guidance on the story selection process (Task 2.3) according to scientific and industrial criteria.

The main output of this Work Package will be the selection of stories that will be communicated to both a broader audience and targeted stakeholders within the Work Package 3 “Public Communication and Distribution”.

### 2.1 Approach and methodology for the assessment of FET funded projects under H2020/FP7

WP2 goals are obtained through a screening activity taking into account sources, research projects and results on FET from FP7 and H2020.

The starting point of the screening activity was a pre-selection of 170 FET projects (130 of FP7 and 40 of H2020), which have been chosen based on the following criteria: projects started between 2012 and 2014 and that finished or will finish between 2015 and 2018. This ensures that the contacted projects already have potential results to be communicated. The database of the pre-selected projects is described in D2.1 EFFECT projects’ database.

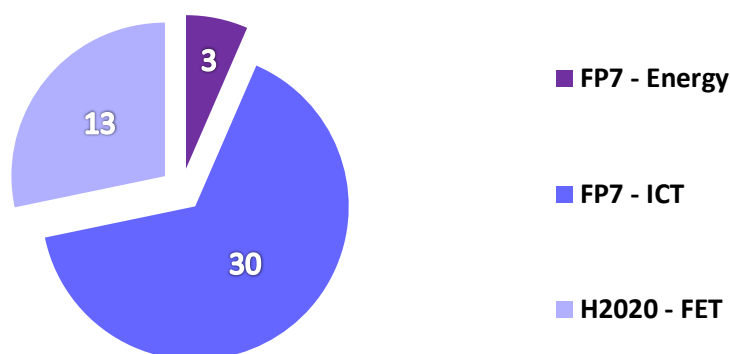
The second phase of the screening selection aimed at involving the target projects and ensuring their commitment in communicating their research results. The work was carried out following a bottom-up approach, i.e. via a tested solicitation mechanism stimulating effective volunteer participation to EFFECT activities. The consortium approached and involved the projects through the following main steps:

- A first contact, via e-mail, with all the pre-selected projects, in order to check their availability to be involved in EFFECT.

- A second contact, via e-mail (and via phone when needed), with the projects that have expressed their availability after the first contact to fix an interview with the EFFECT team to collect more information on their FET project, the expected objectives and potential impacts and their results.

The interviews enabled the team to collect more information about the projects' innovation & scientific achievements as well as about their communication attitude and potential.

The output of this first phase was the screening of 46 FET funded projects from different Framework Programme subgroups:



As a final step of the screening process, the EFFECT Advisory Board was involved in assessing the results of the projects expressing their availability to be communicated via EFFECT (based on the information collected during the interviews). The Advisory Board's assessment focussed on the scientific and innovation potential of the projects and their future possible impacts on society.



## 3 Role and Contribution of the Advisory Board

The EFFECT Advisory Board has been set up by APRE, in collaboration with youris.com and Zabala Consulting, with the task of providing advice and guidance to the consortium by highlighting excellence and innovation of the FET funded projects previously screened within WP2 Implementation. The selection of the Advisory Board members has been ensured by their key role as experts in terms of scientific excellence, diversity in their fields of expertise, affiliation in key organizations or research centers and EU representation.

Their key role in EFFECT has been to provide insights on the projects' excellence and innovation value within the actual context and regarding the projects' potential development based on their experience and expertise within a given field of technological and scientific domain.

### 3.1 Composition of the Advisory Board

The selection of the Advisory Board members was based on 4 main criteria:

- Promoting excellence of the experts within their proper fields of expertise;
- Promoting diversity within the fields of expertise;
- Seeking the representation of European countries accessing to FET funding opportunities;
- Seeking gender equality as much as possible.

Due to the bottom-up nature of Future and Emerging Technologies programme, the field of expertise was a crucial point in order to seeking the best match between area of the pre-selected projects and the Advisory Board Members' fields of expertise.

Different reference documents were taken into account in order to retrieve the overview of the main field of expertise needed to identify the best suitable expertise to be included in the Advisory Board:

Document Title	Requested Information	Website
Horizon 2020 FET Open in 2014-2016: State of play (EC, March 2017)	Interdisciplinarity details and examples of the funded projects.	<a href="#">Link</a>
FET-Open in Numbers (European C, Sept. 2016)	Funded projects interdisciplinarity	<a href="#">Link</a>
The Future of FET - A possible nucleus for the European Innovation Council (FET Advisory Group, Sept. 2015)	Innovation Dimension	<a href="#">Link</a>

Open consultation on FET Proactive for Horizon 2020 next Work Programme - Results	Novel research and innovation areas and themes	<a href="#">Link</a>
ETP4HCP - European Technology Platform for High Performance Computing	Stakeholders involved	<a href="#">Link</a>
FET Flagship- Digital Single Market webpage	Ongoing FET Flagships project	<a href="#">Link</a>
FET Flagship on Quantum Technologies- Digital Single Market webpage	New FET Flagship project	<a href="#">Link</a>

A further assessment was done on pre-selected CVs in order to assess the past and current commitments on Future and Emerging Technologies Programme, taking into account previous involvement in the FET Unit, FET Advisory Group, H2020 Interim Evaluation and involvement in previous projects dealing with Future and Emerging Technologies.

The final panel of 10 experts identified as members of EFFECT Advisory Board is presented in the table below:

	G	Name	Institution	Field of Expertise	FET previous commitment
1	F	Lucia Sorba	Consiglio Nazionale delle Ricerche (Italy)	Materials Sciences	→ FETAG member until 2015
2	M	Sten Grillner	Karolinska Institute (Sweden)	Cognitive sciences e neurosciences	→ Executive Director Human Brain Project
3	M	Arvydas Tamulis	Vilnius University (Lithuania)	Atomic, Molecular and Optical Physics	→ No direct experience on FET
4	M	Erich Prem	Eutema GmbH (Austria)	Computer Science	→ Coordinator of COFET and FEAT projects
5	F	EefjeCuppen	Delft University of Technology (Netherlands)	Governance of technology, science-policy interaction, sustainable development and governance	→ FETAG member until 2016
6	M	Calogero Oddo	Scuola Superiore Sant'Anna (Italy)	Biorobotics	→ Observer during the H2020 FET Flagship Interim Evaluation process, held in 2016-17.
7	F	Raquel Garde	National Renewable Energy Centre (Spain)	Inorganic Chemistry	→ No direct experience on FET
8	M	Matteo Mascagni	Ministry of Education, University and Research (Italy)	High Performance Computing and Aerospace	→ Scientific-Technical Policy expert at European Commission DG CONNECT

9	F	Anne Van den Bosch	IMEC (Belgium)	Micro-electronics and engineering economy	➔ Current FETAG member
10	M	Afonso Ferreira	Centre National de la Recherche Scientifique (France)	Communication Networks, High Performance Computing and Algorithms	➔ Expert to the European Commission, DG CONNECT - FET Unit

In order to foster networking and future possible collaboration, each expert was informed of the composition of the EFFECT Advisory Board and related CVs through the provision of the EFFECT Advisory Board composition (Annex 2) in advance.

## 4 Evaluation Criteria

46 Project Fiches were prepared by EFFECT Consortium during the implementation of Task 2.2 “Searching for involvement and commitment of results’ owners, interviewing the projects” and T2.3 “Identify contents (and individuals) suitable for public communication and engagement”.

The Project Fiches were developed on the basis of an interview to the coordinators of FET projects, who decided to exploit the public communication support of EFFECT.

It was highlighted a set of Key Indicators, formulated in order to respond to of the evaluation criteria.

The evaluation criteria were selected in accordance with the main characteristics of the Horizon 2020 Future and Emerging Technologies Programme, described as the FET Open gatekeepers, taking into account four different dimensions which EFFECT might focus on during the development of communication content in WP3 “Public Communication & Distribution” implementing activities:

- Novelty and Originality
- Innovation Ecosystem
- EU Leadership
- Controversial or positive aspects to be taken into account (e.g. Interdisciplinarity, ethical issues, international interest on the domain).

The table below shows the match between the Evaluation Criteria and the Indicator to be taken into account within the FET funded Project Fiche.

Evaluation Criteria	Project Fiche Key Indicator
Clear identification of project results	Unique Value of the project
Potential Market Uptake	Submitted Patents IP Position
Potential impact on all the disciplines in academic research	Scientific Publication Remaining technical questions to be addressed by the project partners
Exploitation Potential	Availability of prototypes/products of research
Inclusion in an Industrial Research Roadmap	Availability of prototypes/products of research
Social Interest	Unique Value of the project

Knowledge Integration between disciplines	<p>Remaining technical questions to be addressed by the project partners</p> <p>Unique Value of the project</p> <p>Scientific Publication</p>
Potential Media Interest	Rate the potential media interest and relevance to a lay audience
Visual Potential	Visual Appeal
Communication Attitude	Media Coverage
Global Interest in the field	Based on EFFECT Advisory Board Members 's Expertise

More specifically for each analysed Project Fiche the experts had to answer the following questions with a scoring and additional notes/comments:

1. Are **project results** clearly stated and unambiguous?
2. Is the project responding to specific **technological needs** ready for a market uptake?
3. Rate the level of **further research** needed to upgrade the scientific results in all the disciplines involved in the project (not foreseen in EFFECT evaluation form) *Please give small explanations in the Notes section, giving references to new potential paths.*
4. Rate the **exploitation potential** of the project (is there any further innovation activity which has not emerged in the EFFECT evaluation form). *Please give small explanations in the Notes section on experimental trials, demonstration activities, pilots and testing needed, giving references to new potential paths.*
5. Is there any **industrial research roadmap** in place, which can benefit from FET results? *Please give small explanations in the Notes section.*
6. Does the project respond to **societal needs**? *Please give small explanations in the Notes section.*
7. Rate the **interdisciplinary level** and the **knowledge integration** within the project
8. Rate the **potential media interest** and relevance to a lay audience
9. Rate the **Visual Potential** of the project
10. Rate the **Communication Potential/attitude** of the project
11. Rate the **global interest** on proceeding with the project specific scientific disciplines?

In order to assure a ranking list of FET funded projects to be communicated through EFFECT, the Evaluation Criteria were rated on the basis of the clear evidence and correspondence of the criteria in the Project Fiche through the following scoring:

- Definitely, With Clear Evidence (3 points)
- Implicit or inferred (2 points)
- Not Clearly Evident (1 point)

The Evaluation Form (Annex 4) was then developed in order to assure the benchmark of the pre-selected projects, taking into account any insight raised by the Advisory Board during their personal evaluation and the validation assured through the Advisory Board meeting.

## 5 Advisory Board Members' evaluation of the projects

All the 46 FET projects fiches, representing the outcome of the direct interviews with the projects, were distributed to the Advisory Board Members together with: 1. the guidelines for the Experts, containing information on EFFECT, its goals and the consortium's expectations from the experts before and at the meeting, 2. a further Q&A section included after having received by the panel requests of clarifications (Annex 3); 3. The Evaluation Form for FET Funded Projects (Annex 4);

The Advisory Board Members were asked to read all the project fiches and to focus on a set of projects, identified by the EFFECT team, according to their specific area of expertise, and rate according to the different set of criteria described in Annex 4.

The score attributed to each of these projects was entirely subjective, based on the professional and scientific expertise of the Advisory Board members. Their scoring and comments (provided through the notes) aim at supporting the consortium in assessing the most promising projects in terms of potential for media communication and stakeholder-dedicated communication.

Finally the Advisory Board members met in the Advisory Board meeting, held in Rome on June 22, 2017, to present and discuss the results of their analysis and scoring.

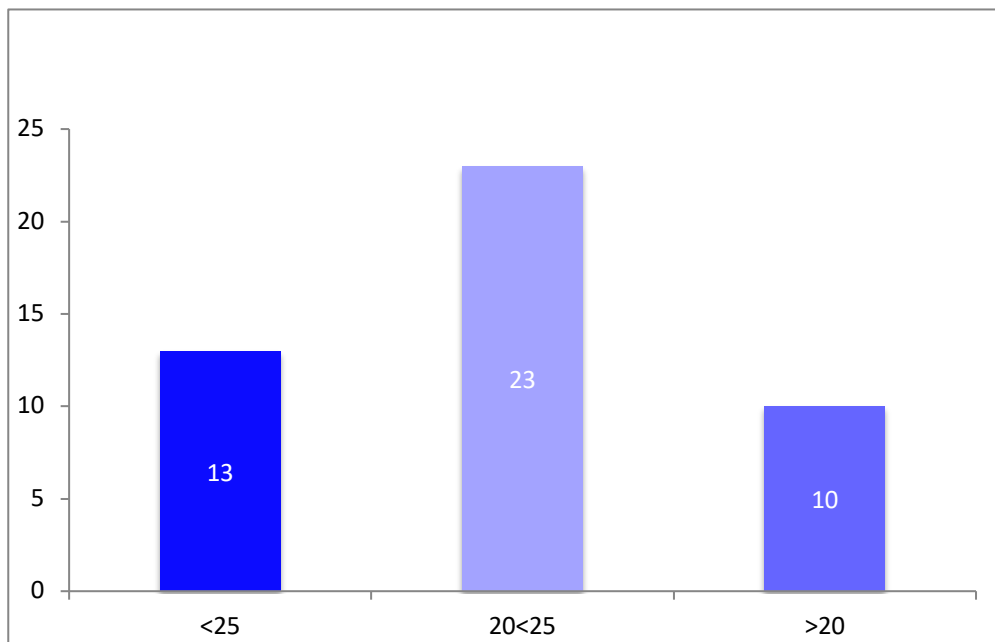
### 5.1 Preliminary results and outcomes of EFFECT Advisory Board individual analysis

A preliminary overview of the individual experts' scoring is reported in the following diagrams. The overview of each scoring for each project is reported in Annex 4. This scoring reflects the individual expert's opinion before the discussion with other experts during the Advisory Board Meeting.

As mentioned in Chapter 4, the Evaluation Criteria, each expert evaluated the assigned projects with a scoring on the basis of the clear evidence and correspondence of the criteria as follows:

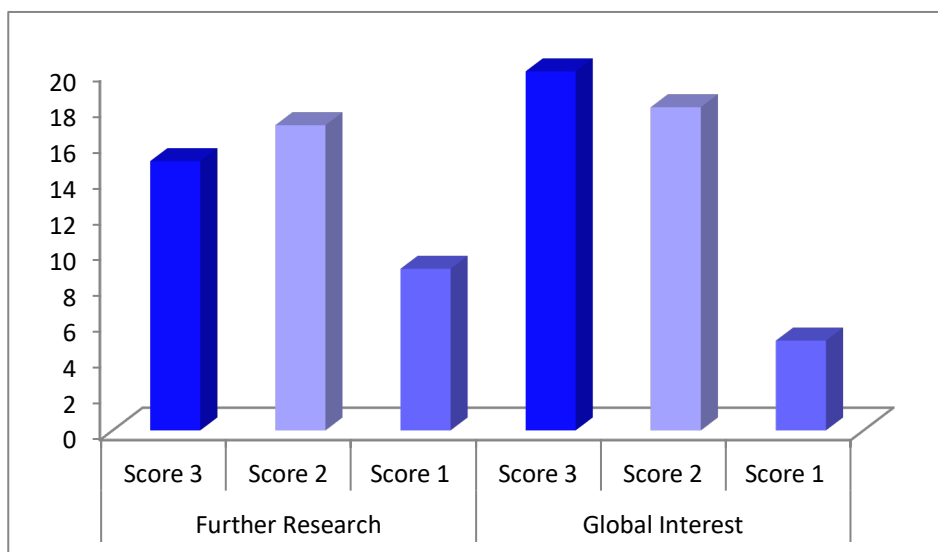
- Definitely, With Clear Evidence (3 points)
- Implicit or inferred (2 points)
- Not Clearly Evident (1 point)

### Individual evaluation results



The majority of the projects (23) received an overall scoring between 20-25. 13 projects were assessed with the overall highest rates.

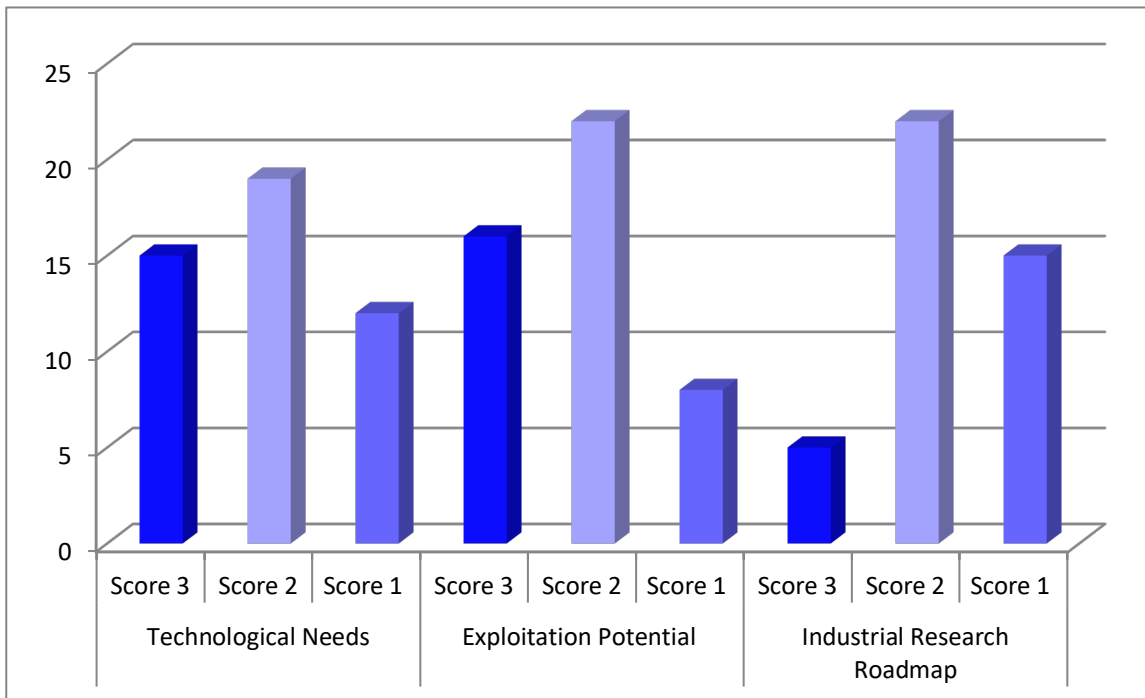
### Impact on academic research rates



According to the individual experts' rates, further scientific research is needed to upgrade the scientific results in all the disciplines involved in the project for the majority of the project and only in a few cases (9 projects) this is not needed. Overall there is a high level of global interest in proceeding with the project specific scientific disciplines.

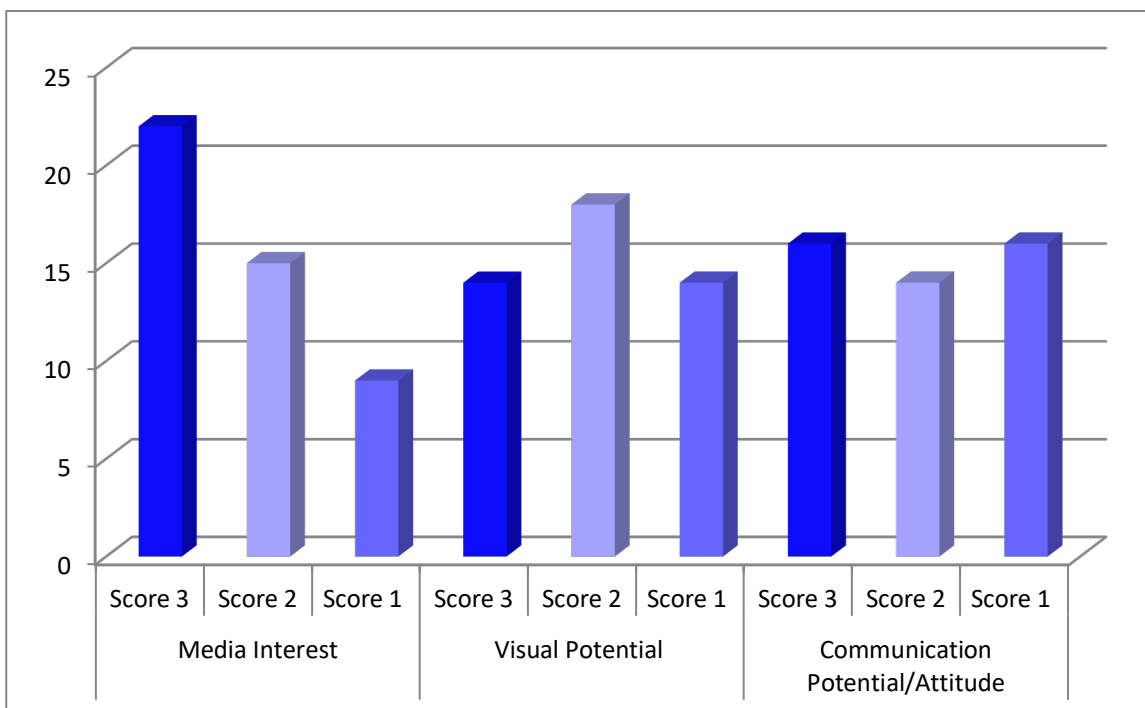


### Exploitation opportunities rates



According to the individual experts' rates, overall the projects are responding to technological needs and there is a high level of exploitation potential in the long term (considering the low TRLs of FET projects), however there are very few cases where an industrial research roadmap is currently in place.

### Communication potential rate



According to the individual experts' rates, the media interest is high for the majority of the projects. The visual potential depends a lot on the specific topics of the project, while the

overall communication potential can be rather high for some projects and quite low for other, even if - in general - all the projects have shown a rather good attitude and interest towards public communication.

## 5.2 Contribution of the Experts during the Advisory Board meeting

During the Advisory Board meeting the results from the screening and interviewing activity and the individual experts' evaluation were shared and discussed. The Experts were split into 3 subgroups in order to organize discussions on each group of projects assigned to the experts. The repartition was made in order to obtain an ideal mix of expertise in the various research fields, taking into account different aspects related to the previous knowledge of the FET Programme and previous engagement and roles. An expert on computer science was ensured on each sub group, due to the high number of FP7-ICT pre-selected projects to be validated.

Two persons from different organizations of the EFFECT Consortium managed the three subgroups, led the discussion of the round-tables and took notes.

A moderator was appointed by the EFFECT team for each subgroup, also acting as the rapporteur of the selected projects identified within the three subgroups.

### 5.2.1.1 Sub-groups' Discussions

During the sub-groups discussions, each expert presented the projects that were assigned to him/her to his/her peers and gave inputs regarding his/her knowledge, experience and material provided by EFFECT consortium. Each project presentation was followed by a short Q&A debate with other experts of the round table in order to confirm the personal scoring of the expert or provide a new assessment based on the discussion.

A first scoring was given to the identified strengths of the specific project, taking into account the following items:

- Target Groups (Who can we reach best?)
  - Research and Innovation community
  - General Public
- Strengths (Which contents are most suitable?)
  - Breakthrough Innovation (New market opportunities or new lines of technology )  
Groundbreaking excellence
  - Social Impact
  - FET Native (Is the project more representative of the FET programme & spirit than others and in which aspect?)
- Focus (Specific topic to be taken into account)

A second scoring was given to the most suitable projects to be taken into account for communication purposes.

#### *5.2.1.2 Plenary Session and Consensus Panel Discussion*

Each rapporteur gave an overall overview of the projects assigned the subgroup, raising attention to particular information on the project to be taken into account for the communication contents.

During the overall presentations of highly ranked projects, each member of the Advisory Board had the chance to add relevant comments and information related to the specific project presented at that time.

The results of the EFFECT Advisory Board meeting and the final evaluation of the Advisory Board together with the consortium assessment will be provided in D2.4 Report on Content Collection and Selection.

## 6 Conclusions

The assessment of those projects, which accepted to be communicated through the first screening phase (see D2.2), through a group of experts members of the Advisory Board has represented a milestone for the project, necessary to launch the overall editorial production and communication actions. The definition of the criteria for the experts' evaluation of the projects from a scientific and innovation point of view has been set by the EFFECT consortium and agreed with the Advisory Board.

The overall assessment of the EFFECT consortium and of the members of the Advisory Board, who have provided valuable and essential inputs based on their scientific background, will be brought together in the 'Report on content collection and selection' (Deliverable 2.4).