

The Future of Energy: leading the change

*A scientific program in support of
a successful energy transition*

Call for proposals 2018

Synopsis

This Call for proposals addresses topics in the fields of energy, mobility, spatial and urban planning, and covers scientific, technical and social science related aspects. It is open to the academic research community as well as to other actors (consultancies, NGOs, ...). Project duration is expected to be of the order of (several) months and funding requests should not exceed 50.000 Euros.

Extended Deadline: April 30,2018

1. BACKGROUND – ABOUT THE *FONDATION TUCK*

The *Fondation Tuck* (www.fondation-tuck.fr) is a French public interest foundation dedicated to the promotion of education, research and future studies in the field of energy and sustainable development. Actions in the domain of education are focused on granting student scholarships and research chairs at IFP School, a French public higher education institution offering applied graduate programs open to students from all over the world with the aim of providing highly qualified professionals to industry and society in the fields of energy, oil and its substitutes, gas, petrochemicals and power trains. Actions in the domain of research and future studies are focused on funding projects through competitive calls for proposals, as for example The Future of Energy program.

The actions of the foundation are made possible thanks to non-endowed (expendable) donations received, in particular, from industry.

2. CONTEXT AND SCOPE OF THE PROGRAM

The multi-year scientific program The Future of Energy is rooted in our profound conviction that the energy sector, including the transportation and building sectors, will undergo very significant changes during the coming decades. However, the pace, form and characteristics of these changes remain highly uncertain. Reducing the uncertainty level is of prime importance for both, public and industrial investors, in order to anticipate future evolutions, support most desirable orientations and avoid sudden disruptions.

From year to year, different topics are proposed to the research community through competitive calls for proposals. These topics and the associated findings will be the building blocks of a global, multi-sector, multi-disciplinary, systemic vision of the future of energy.

The proposals will be subject to an assessment procedure involving a review by experts and the final selection will be made by a dedicated selection committee. The selected projects will be funded by the *Fondation Tuck*.

The language of the program is English. More information on the program is available at [the program web page](#).

3. GENERIC RULES FOR PROPOSALS AND DELIVERABLES

The topics (see section 5 below) are generally formulated in such a way that quite different project proposals can be made. The proponents thus need to clearly motivate and explain their specific choices.

Innovative and systemic approaches (from a technical but also social standpoint) will be favoured and out of the box thinking and solutions are particularly encouraged. Still, the practical feasibility is considered as an important criterion, social and environmental constraints should be appraised, and sustainability and environmental aspects will be taken into account. A critical view on well-spread concepts is welcomed, if based upon a rigorous analysis.

A typical work program could include several parts such as:

- Current state of the art (eventually including main historical advents);
- Possible evolution paths or scenarios, based upon available literature and/or personal information;
- Original proposals / solutions
- Future outlook: Expert's view on most likely evolutions, long term benefits and threats.

It is not expected that extensive specific research work will be performed during the project. The priority is clearly given to synthetic analysis and expert's views. The proposals should include clear objectives and a detailed presentation of the strategy and methodology applied to reach them.

The deliverables of the projects will be twofold: one written report, and the participation in a physical meeting close to Paris, France, in order to discuss the findings of the projects with experts and peers. The report will be made freely available on the foundation's website and the meeting will be open to the public.

It is expected that the projects organize kick-off and progress meetings. The *Fondation Tuck* will mandate representatives to participate in these meetings, at its own expenses.

4. BUDGET AND FUNDING

It is expected that the overall budget for a given project corresponds to several person months and that it includes the necessary travel expenses, including those related to the Paris meeting. It is not expected that significant other costs arise for the projects.

The projects may request funding from the *Fondation Tuck*. The level of funding (percentage of project budget) requested needs to be explained. If other funding sources will be used, they have to be mentioned. The *Fondation Tuck* welcomes projects that are co-funded from one or several other funding sources, as long as this does not impact the public nature of the deliverables. Funding requests should not exceed 50.000 Euros.

5. TOPICS FOR CALL 2018

The call 2018 of the The Future of Energy program focuses on three topics:

- New relationships between energy systems and communities
- Future of liquid or gaseous energy carriers

- Climate change impacts on energy systems

Topic 1 – New relationships between energy systems and communities

Energy systems, in particular electricity generation, have been largely developed as centralized production systems with no direct relationship to the local or regional communities. Decentralized, diffuse electricity generation technologies like solar and wind have the potential to redefine the relationships between the energy system and the local/regional communities. Which business and governance models have been developed in different European countries? At what scale (size/geography of community, volume of energy produced)? Which are the driving forces (bottom-up, top down)? What are strengths and weaknesses of the different models, their successes and failures? What are the key success factors? May these models be deployed in other regions/countries or on other continents?

Topic 2 – Future of liquid or gaseous energy carriers

Electricity as a very versatile energy carrier plays a dominant role in all energy transition scenarios. However, in the current energy system, and in particular in the transportation and some industrial sectors, liquid and gaseous fossil fuels play a critical role. In a future sustainable energy scenario, what could be the role of (renewable) liquid or gaseous energy carriers? Which are possible carrier candidates (hydrogen, methane, ethanol, methanol,)? What are their strengths and weaknesses? Which ones are the most versatile for a transition scenario, for a disruptive scenario? For which applications and which markets? Are there technical barriers, or significant future advances to be expected? What could be possible deployment scenarios?

Topic 3 – Climate change impacts on energy systems

Most renewable energies, and in particular solar and wind, but also biomass, are directly related to meteorological conditions, and thus to general climate evolutions. Changing precipitation patterns, higher frequency of very low or very high wind speed regimes, etc, may have an impact on the future performance and deployability of these technologies. Similarly, traditional power generation systems may for example be impacted by increased river and sea water temperatures. What are the main vulnerabilities of the current and future energy systems with respect to climate change? Could these vulnerabilities be mapped? Are there specific actions possible to increase climate resilience of energy systems? It is expected that project proposals concentrate on the case of Western Europe.

6. PROJECT SUBMISSION AND TIMELINE

Project proposals based on the template presented in Appendix A are to be submitted in PDF format by e-mail to contact@fondation-tuck.fr. Proposals must not contain any confidential information.

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The evaluation procedure will in particular involve a review of proposals by experts mandated by the program and the selection will be done by a dedicated selection committee.

The *Fondation Tuck* may contact the proposing party in order to obtain additional information or revisions of the proposal. The funding decisions will be taken within one to two months after the deadline and projects are expected to start soon thereafter.

The funding contracts will be established between the *Fondation Tuck* and the organisations of the selected projects. Selected projects are expected to contribute to communication and dissemination activities of the *Fondation Tuck* and the The Future of Energy program.

For additional information, please contact contact@fondation-tuck.fr.

APPENDIX A – Project proposal

This project proposal must not contain any confidential information. It will be evaluated by the program's scientific committee and possibly by external evaluators.

Identification

Call topic addressed:	
Project title:	
Name of organisation	
First name, Name of Principal Investigator	
Current position	
Contact details (address, e-mail, phone, mobile)	

Project description

Describe methodology used, programme of work, timeline, contributors, collaborations, (2 to 5 pages),

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Qualification

Explain why you or your group / organisation are qualified for this work, provide bibliographic references (1 to 2 pages)

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Project budget and funding request

Explain project budget (breakdown personal cost, overhead cost, other costs), funding request, co-funding organisations, (1 to 2 pages)

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Additional information

Optional: Provide additional information that you consider relevant for your proposal (limited to 5 pages)

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