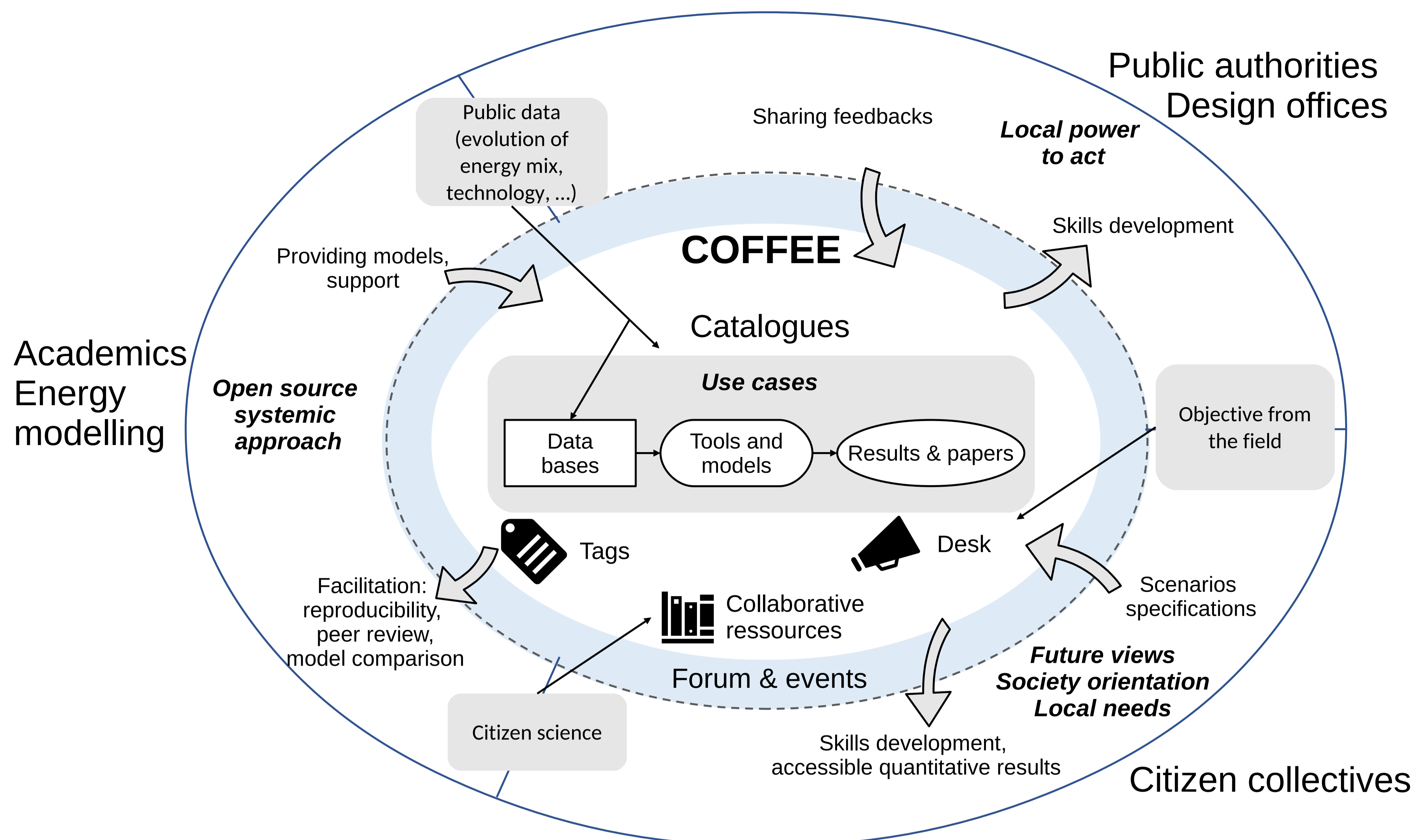


# Concept and recommendations for the development of collaborative open energy modelling platforms

## A platform concept: Collaborative Open Framework For Energy Engineering (COFFEE)

Based on existing literature, we developed a concept of open and collaborative platform in the field of energy modelling. The platform intends to make energy research accessible, and to improve collaborations between researchers, public authorities, design offices and citizen collectives. We also carried out a "user experience" inquiry with a representative panel. The results can serve as guidelines for the implementation of open energy modelling platforms.



## 12 recommendations for collaborative open energy modelling platforms

**Clarify the integrator role:** adopting a partnership approach with the actors who provide existing resources, proposing new resources only to create **added value to what already exists**, and **offer guidance** in the complex energy modelling ecosystem.

**Positioning the platform in an open science dynamic:** providing existing scientific knowledge and highlighting the **reciprocity** of the research carried out in the field, thus sharing the operational benefits for the territories.

**Strengthening perspectives in terms of economic model:** reassure on the minimum means of **perpetuation** of the platform, and on the **open model** of research results, so that the user has sufficient confidence to contribute.

**Unlocking the stock of individual resources:** prospecting to uncover a pool of both formal and informal scientific resources for collaboration, and encourage sharing by raising awareness on open science practices.

**Organising data:** offering a standard **formalisation** framework to ease inputs and to make resources identifiable and usable, according to various criteria such as peer rating, level of difficulty, etc ...

**Offer verification and certification of data:** positioning as a **trusted** network through its neutrality, to guide and make energy studies reliable.

**Facilitate the network:** promotion of new contents and **facilitation** of thematic workshops, thus **bridging** the gap between communities on operational issues and concretising the transfer of research.

**Clarify the positioning between proven vs. innovative solutions:** **positioning** the resources level of maturity, so that users, especially design offices, can get involved in accordance with their open or closed model strategy.

**Support the development of the skills of novices,** with entry-level resources. Also, **offer collaborative skills building** for professionals.

**Supporting the relationship between the conurbations and local communities:** while urbanised conurbations usually already benefit from an expert network linked to the research, **small local communities could benefit** from the platform to access resources for new projects or citizen actions.

**Balancing socio-economic resources and technological solutions:** solutions related to socioeconomic issues are tough to find and often more relevant than technological solutions. An interdisciplinary link with social, economic and legal research, as well as feedbacks on financial and organisational models should be developed.

**Implement a search engine and/or human resources:** given the high quantity of resource and the variety of level of expertise, either a dedicated search engine and/or human resource could help in the indexation and mediation.

More information:

- "User Experience Inquiry to Specify COFFEE: A Collaborative Open Framework for Energy Engineering", to be published in *Electrical Engineering, Springer*, April 2023
- Full study report (in French) <https://hal.archives-ouvertes.fr/hal-03631343>
- PhD Manuscript, chapter 5 (in French) <https://hal.archives-ouvertes.fr/tel-03809331>

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