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Citizens Attitudes and Feedback regarding Energy Transition Technologies

A RESEARCH PROGRAM AND METHODOLOGY TOOLKIT TO ENHANCE DIALOG FOR ETT SOCIAL ACCEPTABILITY

Vert-Mont, May 29th, 2018

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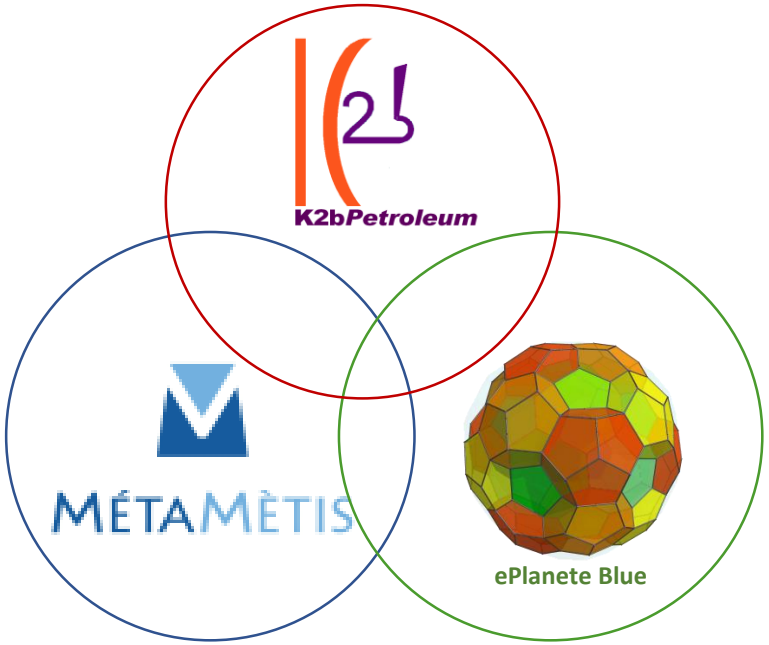
Widespread deployment of energy transition technologies [ETTs] will largely depend on the attitudes of consumers and citizens :
Are they enthusiastic or reluctant? For what reasons? Under what circumstances? What are their worries, their hopes? What are the roles of local and regional/national policies and politics? Are there community-typical attitudes? What are the roles of friends and family? Is common good valued against individual comfort? So many questions that are social, cultural, technical… to figure out and anticipate how controversies are building-up and sometimes crystallize around ETT projects.

And what if we play it ? And learn.

CAFETT program brings together an interdisciplinary team of professionals and academic investigators from three long-experienced partners in the fields of Social Sciences, Information Intelligence and Energy Transition Technologies.

Energy Transition Technologies



Information Intelligence

Social Sciences

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C A F E T T program objectives

- **Research and Develop a method for** incremental acquisition **of a robust social science understanding into the nature and occurrence of controversies around different types of ETT projects (incremental learning process)**

- **Provide salient observations and** toolkit for decision makers **to early characterize potential ETT controversies and support co-construction and dialog in between projects stakeholders (social acceptability risk evaluation)**

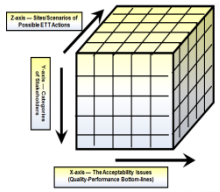
Experiment and build-up on deliberation mechanisms

Task 1 :
State of the Art

Task 4 : Observation and Feed-back

Learning Tool Kit

Task 3 :
In-Vivo case deliberation



Task 2 :
Processing Methodology (Kerbabel)

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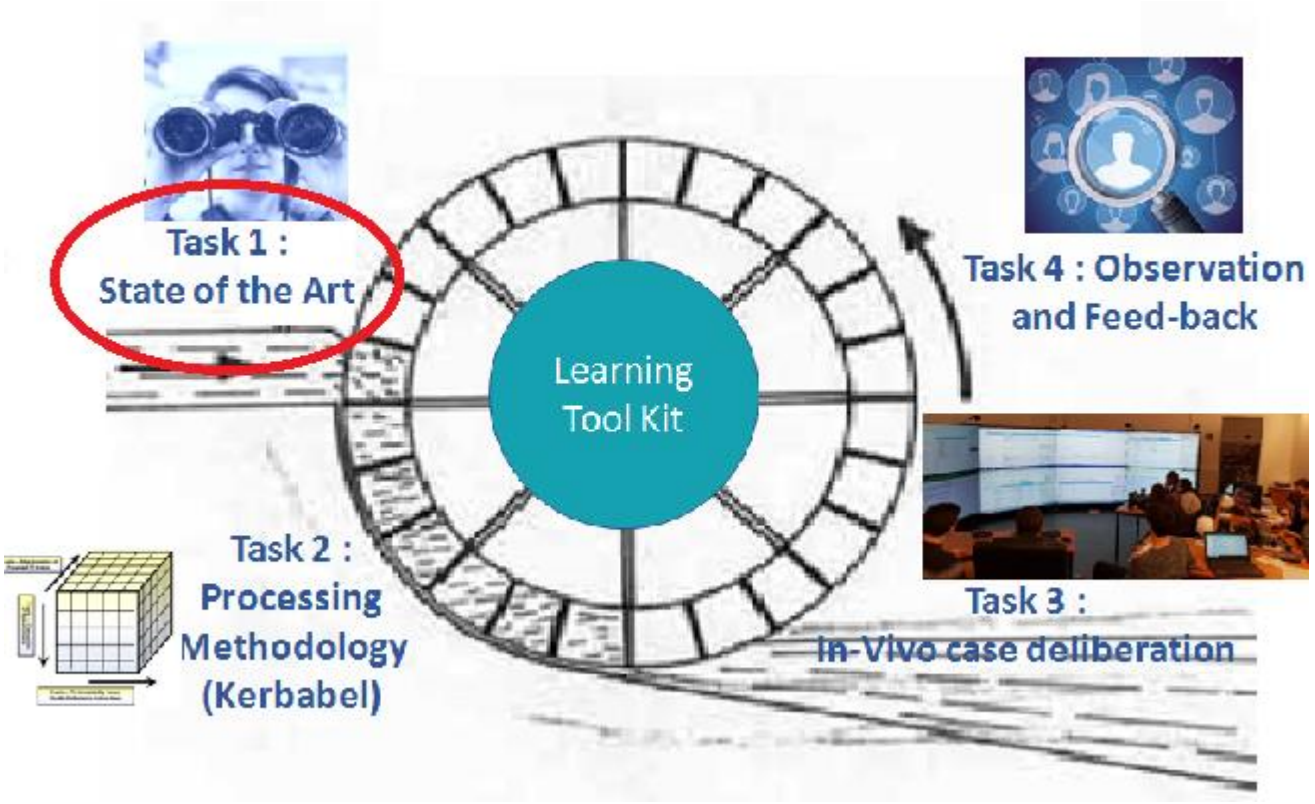
C urrent C A F E T T projects basis

- The State-of -the-Art analysis was conducted on 4 diversified projects in France and US

- In-vivo cases deliberations were conducted for Gardanne Biomass power station project and St Brieuc offshore windfarm project

Task 1- State-of –the-Art Analysis



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Task I : objectives

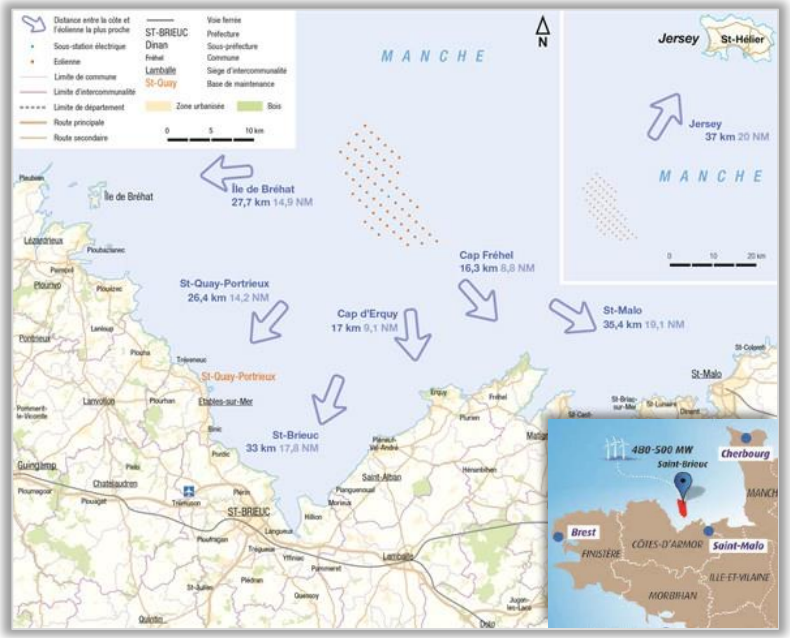
To analyze on-going controversies about projects implementing energy transition technologies (ETTs)

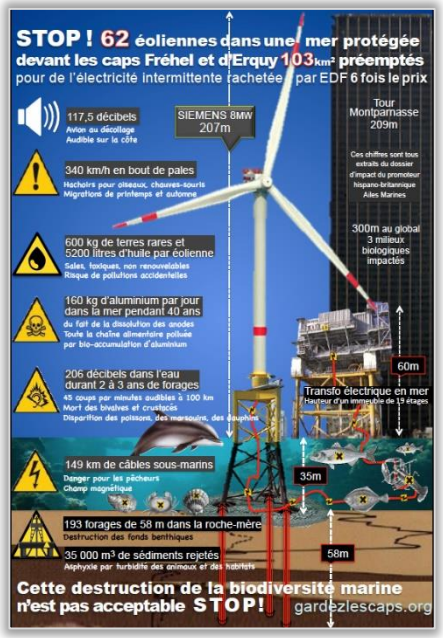
- **4 projects**
- **Characterization of opponents**
- **Argumentation analysis and classification**

Task I : Projet 1

Saint-Brieuc offshore windfarm

The painful emergence of offshore wind in France





- 62 Siemens wind turbines, (8MW, 216 meter high)
- Total power: 496 MW
- Cost: 2,5 billions €
- Inital construction beginning schedule: 2018
- Re-schedule, due to controversy : 2021

Task I : Projet 2

LINKY

A French divide

- 32 million smart meters are to be installed by 2021 (~ 9M already installed as of may 2018)
- According to Enedis, Linky will allow, among other things :
  - *the client to view its power usage in real-time, and hence better manage his consumption and save money,*
  - *the power supplier to design and bill more versatile offers,*
  - *the network manager to perform efficient load balancing, which is essential for renewable energy integration.*
- First legal action against Linky in 2011. « Référé » collective actions against Enedis are currently pending in 22 courts. A group of lawyers is also preparing a collective action against the State in June 2018 (on motives of health and privacy protection).

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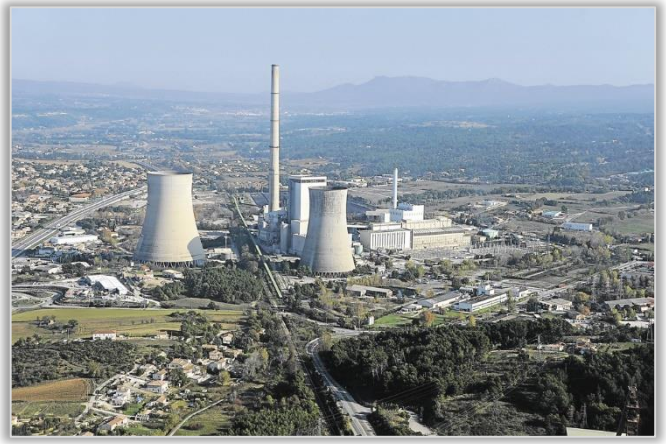
Task I : Project 3

Gardanne biomass power plant

(Centrale thermique de Provence)

Energy transition or ecological sham?

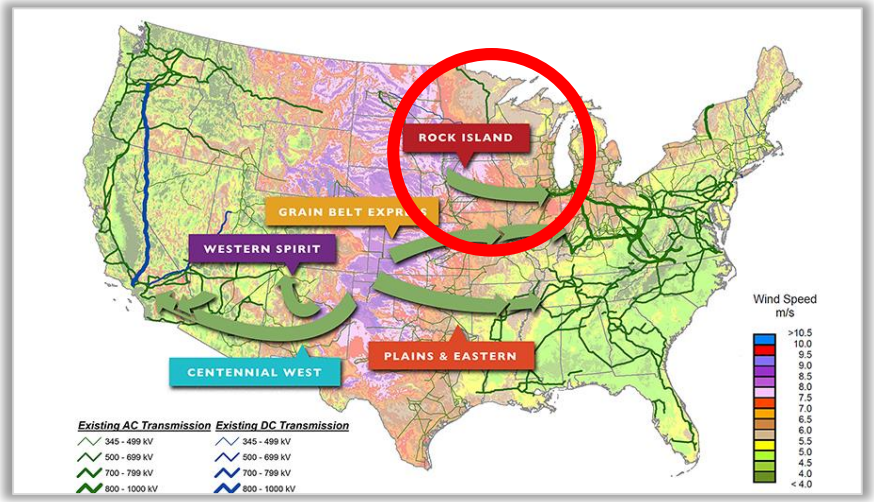


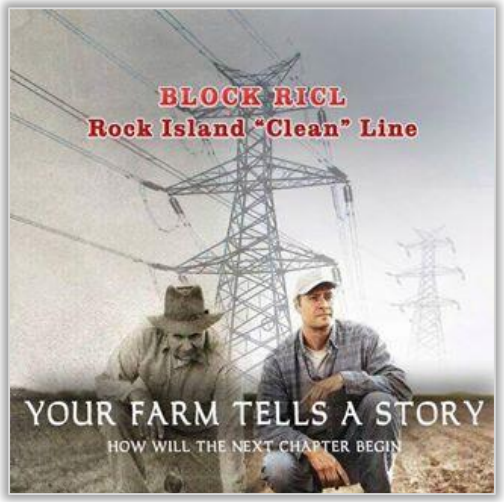
- Refurbishing of a coal/pet coke power plant unit into a biomass (wood) power plant, with an electric power of 150 MW, producing 1125 GWh/y
- Annual wood consumption : 850,000 tons (of which 445,000 from local forestry)
- Investment : 250 M€
- The French State will subsidize the plant for 20 years, for a total amount of 1.4 billion €
- The plant is own by Uniper, 46% of which have been acquired from E.ON by the Finnish national company Fortum
- In June 2017, the Marseille administrative court rescinded the operation license following a request from several associations. In may 2018, Uniper was awaiting a new permit, after the completion of new impact studies.

Task I : Projet 4

Rock Island Clean Line (RICL)

Rural America VS « Big wind »

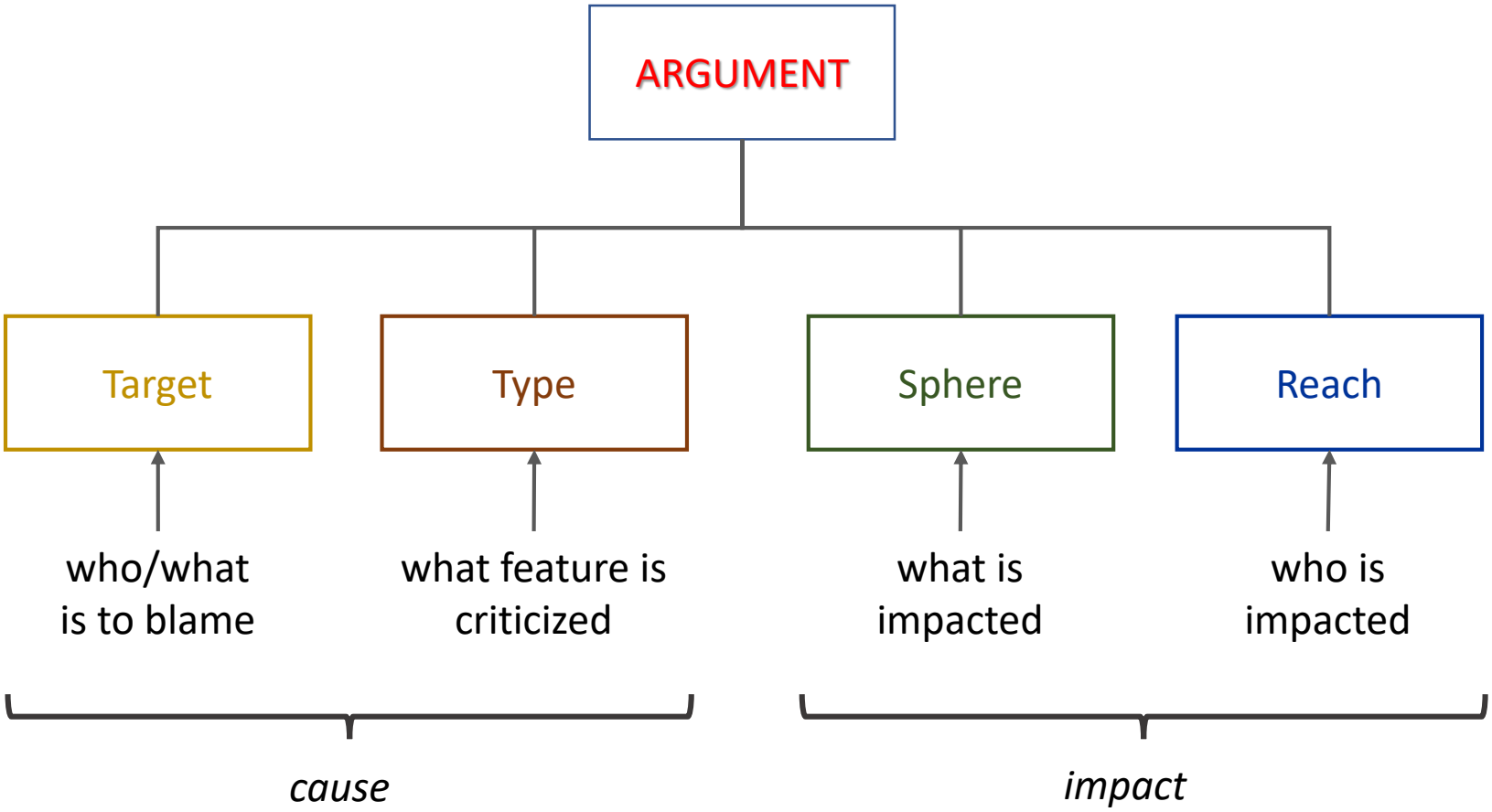




- a 500-mile overhead high voltage direct current (HVDC) transmission line with a capacity of 3,500 MW,
- the line route goes through Iowa and Illinois towards east,
- RICL will allow more than 1.4 million homes in the Midwest to be powered by renewable energy from wind farms,
- The project is developed by Clean Line Energy, along with 4 others HVDC in the United States. The projected investment is 2 billion $,
- In the initial planning, the construction was due to start in 2014 but has not begun yet.

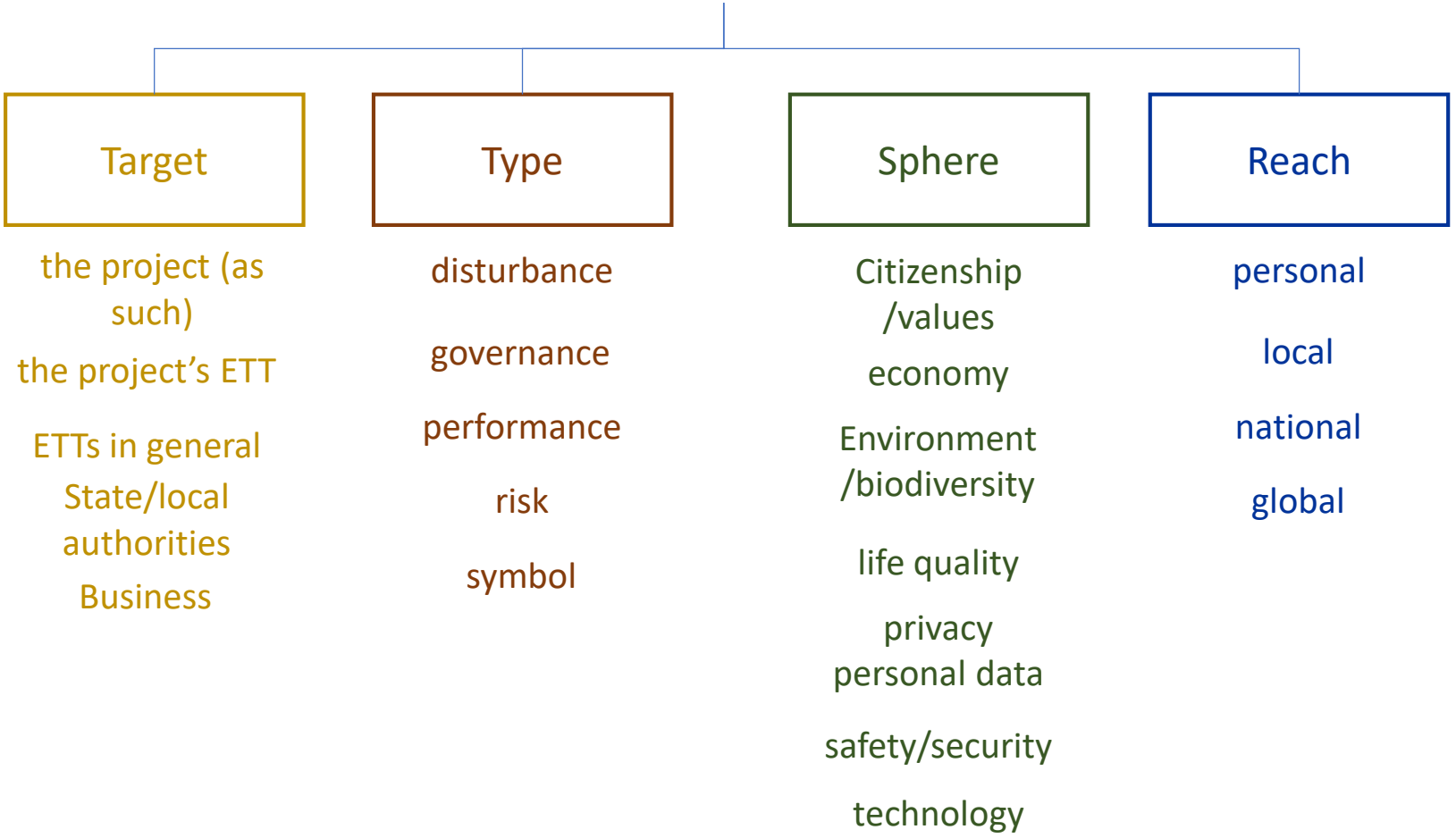
Task I/Finding 1: Argument classification (1)

Arguments can be classified according to 4 axes



Task I/Finding 1: Argument classification (2)

Classification axis values



Task I/Finding 1: Argument classification (3)

Classification examples

Axis	TARGET	TYPE	SPHERE	REACH
« This project will reduce the value of our farmland »	*The project*	*Disturbance*	*Economy*	*Personal*
« Linky can catch fire »	*The project's ETT*	*Risk*	*Safety/ Security*	*Personal*
« Offshore Wind Energy is a waste of public funds »	*The project's ETT*	*Performance*	*Economy*	*National*
« This project has not been decided in the general interest but to the benefit of a few private companies »	*State/local authorities & Business*	*Governance*	*Citizenship/ Values*	*National*
« Overall, this project will not reduce CO2 emissions »	*The project*	*Performance*	*Environment/ Biodiversity*	*Global*
« This project is imposed by an authoritarian technocracy which does not care about the people's opinion »	*State/local authorities*	*Symbol*	*Citizenship/ Values*	*National*
« This project will lower revenues earned from local tourism »	*The project*	*Disturbance*	*Economy*	*Local*

Task I/Finding 2: Rhetorical figures and argumentation fallacies

The most committed opponents may resort to deceptive rhetorical figures or argumentation fallacies to gain support from the general public

Examples

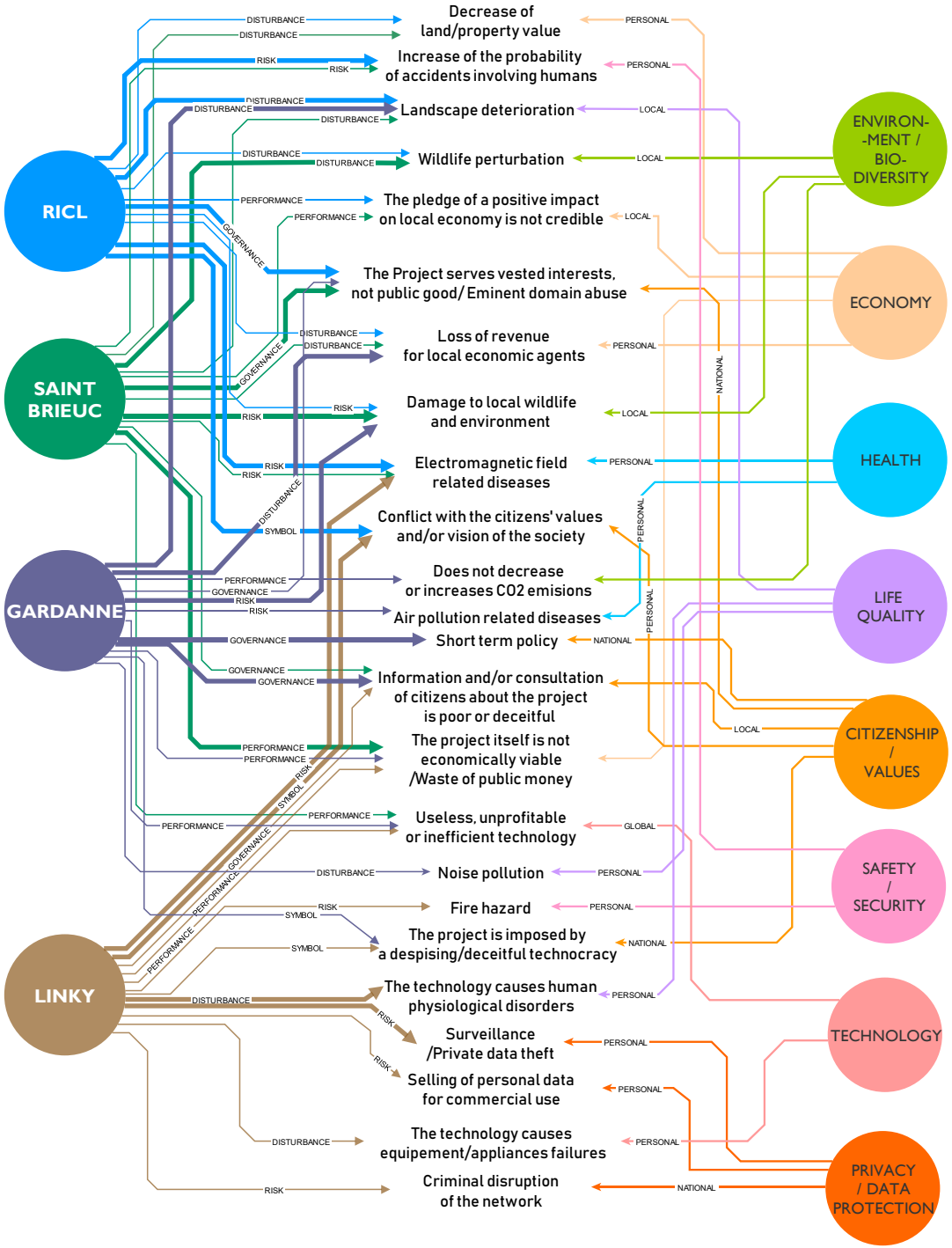
- Appeal to fear
- Hasty generalization
- Well poisoning
- False analogy
- Guilt by association
- Cum/Post hoc ergo propter hoc (simultaneity = causality)
- Evidence cherry picking
- Appeal to sentiment
- …

Task I/Finding 3 : Diversity of arguments

- All of the projects face many counter-arguments, matching numerous axis value combinations in our classification scheme,
- Personal and local arguments seem to be the most prominent ones, although more general complaints related to social values and citizenship are not unusual,
- An opposition to a project can be triggered or amplified by an already existing social discontent or resentment.

Task I/Finding 3: Diversity of arguments

(Thick lines highlight the most prominent arguments)



Task I/Finding 4: Opposing organizations characterization

- **Grassroots organizations are key in every case,**
- **National and international organizations are useful as :**
  - *Visibility enhancers,*
  - *Expertise providers,*
  - *Legal advisers and backers,*
  - *Connectivity enablers (between different projects).*

Task I/Finding 5: Opponents characterization

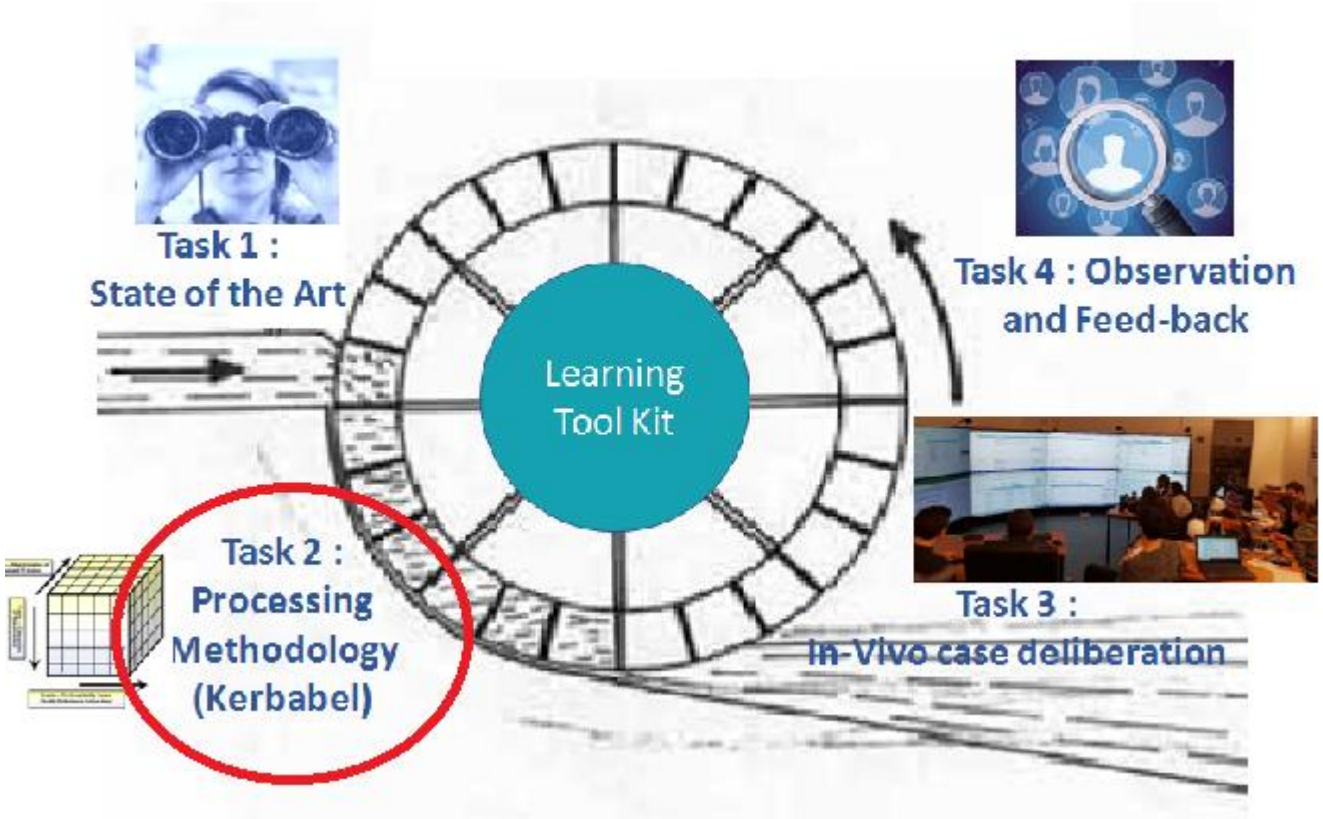
Opponents can be classified according to their social profile and motivations

Profiles	Anti-system activist	Concerned citizen	Active retiree	Specialized lawyer	Scientist	Journalist	Politician
Focus	Multiple commitments	Focus on one cause	Focus on one cause	Multiple commitments	Focus on one cause	Multiple commitments	Multiple commitments
Motivation	Political struggle, fighting the establishment	Protection of his family and his property	Staying active after retirement through commitment to a general interest cause	Build a positive corporate identity by committing himself to causes in which he believes	Warn the society about issues in his field of knowledge. Gain visibility by adopting a not « politically correct » stance	Be recognized as a whistleblower. Informing the general public about sensitive issues	Defending his territory. Showing commitment to the voters.
Reach	national, global	personal, local	local, national	national	national, global	local,national	local,national
SAINT-BRIEUC		X	X				
LINKY	X	X	X	X	X	X	X
GARDANNE		X	X		X	X	X
RICL		X					X

Task I/Finding 6: ETT acceptance wrap-up

- To qualify a project as an « Energy Transition Project » is not enough to gain general acceptance,
- To support a project, a part of the population demands to gain a tangible benefit from it,
- The rejection of a society ruled by « experts » and « elites » can trigger conflicts against projects appearing « rational » and « reasonable »,
- To win the people's support, energy transition must come with a paradigm shift, not just as « business as usual ».

Task 2- Methodology : Social acceptability



Task 2 – Methodology : Social Acceptability

Establish, in relation to the state-of-the-art (both empirical and theoretical), a methodological framework for interfacing inter-disciplinary ETT expertise with the views of consumers and citizens, in a multi-criteria multi-stakeholder dialogue around the potentials and conditions for societal acceptability of ETTs.

Literature Review

Insights from domains such as:

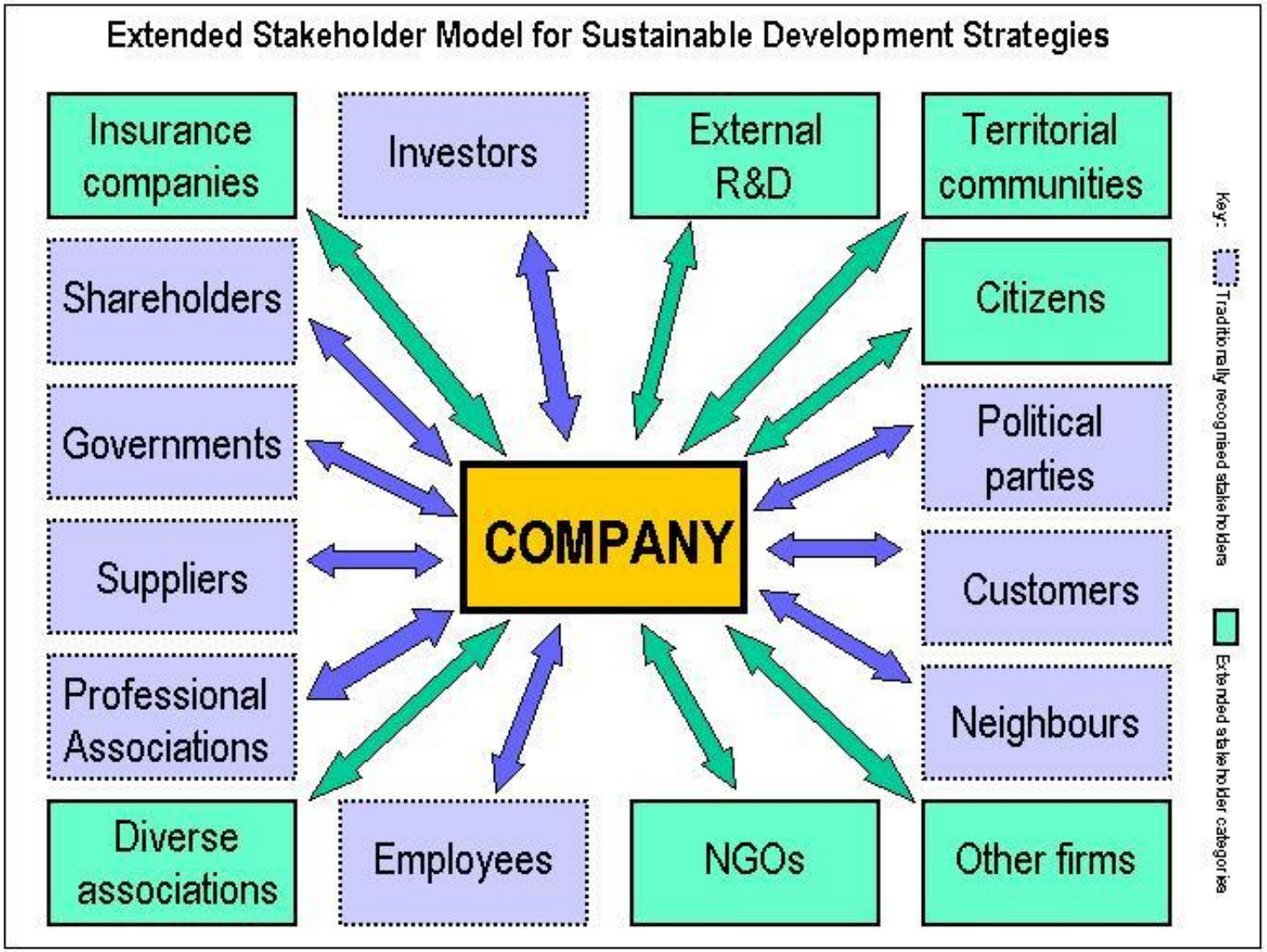
- *Technology Risk Assessment*
- *Corporate Social Responsibility*
- *Responsible Innovation*
- *Social Multi-Criteria Evaluation*
- *Theory of Deliberative Democracy*
- *Sustainability Indicators*
- *Stakeholder Analysis*

Empirical Investigations

Several methods of consultation

- *Interviews with territorial actors (e.g., marine wind energy, forest biomass, energy use & building renovation…), ;*
- *Interviews with representatives of the State (e.g., biomass, agriculture and forests, Plan Climat, circular economy, energy & buildings…);*
- *Focus groups discussions with Masters & PhD students (renewable energy, smart systems…)*

Task 2 – Methodology : Social Acceptability



Determinants of ETT societal acceptability – Preliminary Orientations

- **Impacts on Surroundings** (landscape, urban environment, .., visual or other perception)
- **Impacts on Behavior** (changes in habits, perceived life quality, lifestyle, culture,..)
- **Impacts on Integrity** (privacy, health, autonomy/power, revenues,..)

- **Perceived quality of the goods and services** that are/would be the objects of commercial transactions;
- Perceptions of the ETT life cycle with **"external" social, territorial and environmental impacts**;
- the wider tissue of society whose dynamics — including the interplay of **beliefs, ideologies and social values** — will determine the ETT's societal acceptability.

THEORETICAL FRAMEWORK (*schematic view*)
ETT Acceptability as the search for a "Social Contract"

THE « OFFER »

(on the part of the company or other ETT project promotor)

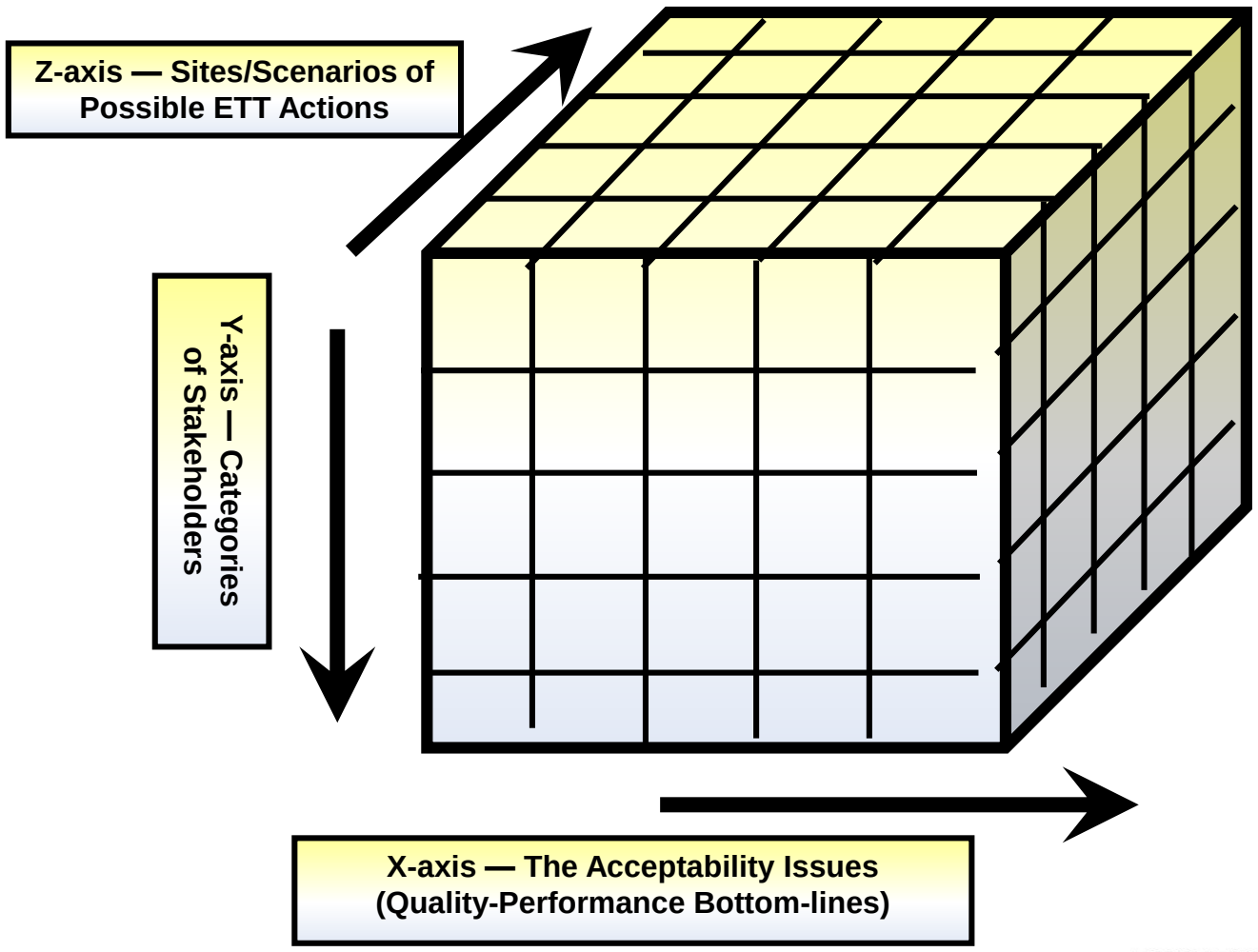
The "Offer" or Supply … of commitments established in terms of declared principles of quality and responsibility;

THE « SOCIAL DEMAND »

(on the part of the host communities)

The array of requirements imposed on (or asserted towards) the business entity or sector, as conditions for acceptability and acceptance by citizens as a legitimate part of their society.

Synthetic View of the Structure of Comparative ETT Assessment



Task 2 – Methodology : Social Acceptability

The CAFETT Task 2 enquiry leads us to put the accent on process design for multi-stakeholder deliberation, both exploring and building conditions for confidence.

1. **Experimentation of options for Classification of Acceptability Issues, Arguments and Stakeholders (= new state of the art);**
2. **Design for exploration of the roles and behavior of stakeholders in structured deliberation support processes at different stages of a project life cycle (= Task 3);**
3. **Leading to a recommendations about the mechanisms of « *building controversies* » and for learning process allowing better to prepare and build the necessary project co-construction (building & maintaining trust in society).**

Conclusions from Task 2 – Methodology (1/3)

- The CAFETT approach to social acceptability as a challenge of building a ***« social contract »*** across stakeholders has substantial explanatory power.
- The translation of this conceptual framework in operational terms as a ***multi-actor multi-criteria evaluation problem***, permits insights to be obtained through both expert analysis and participatory deliberation.
- General typologies of ETT Stakeholders and Acceptability Issues can be provided at a high level of abstraction. These general categories provide *top-down* guidance for pragmatic identification of key Issues and Stakeholder categories necessarily based also on *bottom-up* insights.
- There could be high added value from building up a ***« bank » of case studies*** using the Actor x Issue framework, as a methodological resource for transposition and adaptation to comparable ETT problems.

Conclusions Task 2 – Building Trust (2/3)

- Some ETT projects are deeply more controversial than others.
- Nonetheless, « acceptability » is not a fixed parameter: it evolves in complex ways, in and through social processes.
- Prospects of success (that is, *ex post* acceptability) are, in the general rule, enhanced by procedures that demonstrate recognition of and respect for stakeholders in their diversity.
- Credibility of any partnership or co-construction concept depends on stakeholders' perceptions of sincerity.
- In other words, confidence (trust) must be built up & earned through good process design!

Conclusions Task 2 – Stepwise Success (3/3)

Conditions for Success (achieving ex post Acceptability):

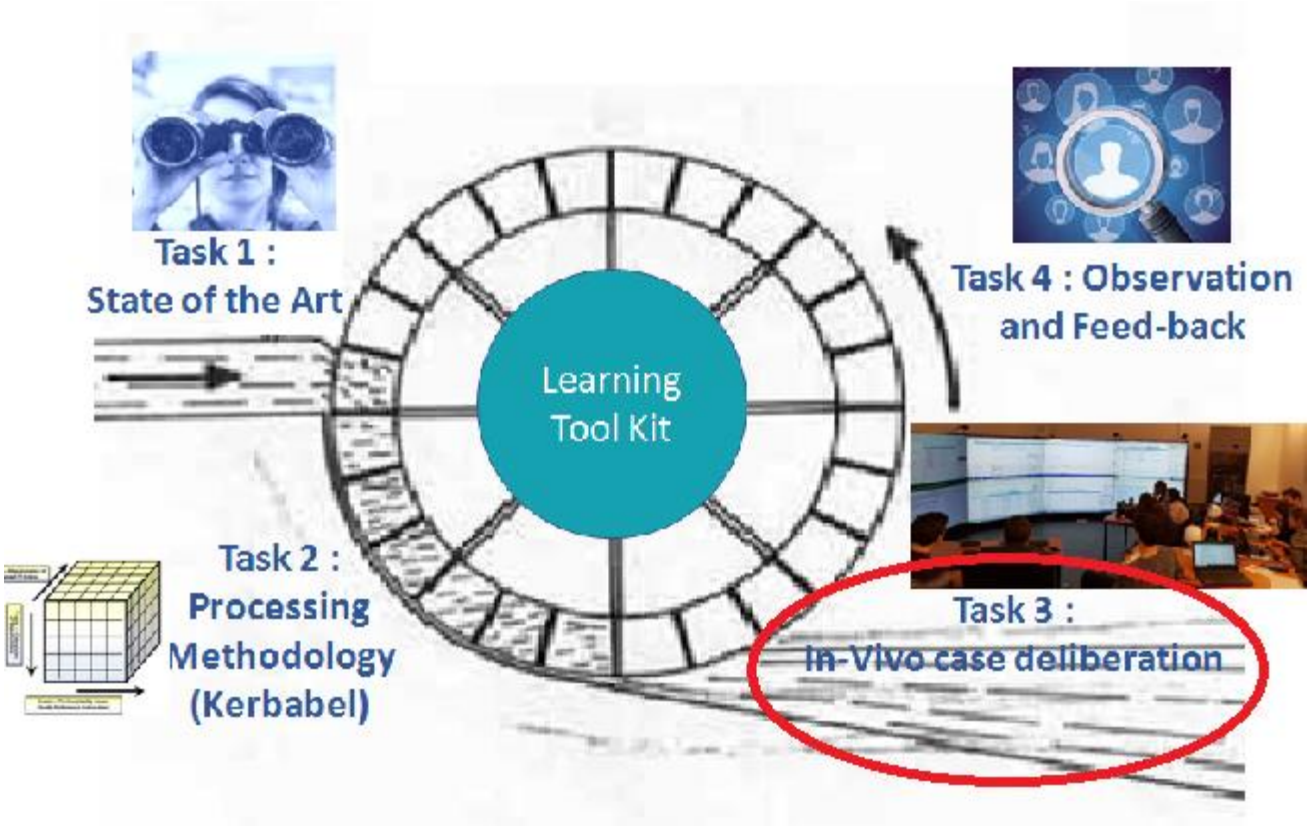
- If a co-construction process is engaged, it must advance in visible ways, stepwise to tangible and meaningful outcomes for all key stakeholders.

The state (and its delegated agents) has, in principle, a key role to play for ensuring this visible movement.

- The state must set – and guarantee – the general rules within which consultation & co-construction processes take place. It must also commit to meaningful, timely stepwise outcomes – which function as proofs and rewards for engaged stakeholders.

Leaving processes to implode is a type of « governance failure ». We observe in several cases that doubt & mistrust easily breed when meaningful and timely outcomes are not provided. ***[The devil makes work for idle hands…]***

Task 3- Experimental case deliberation



Nature and Purposes of the Deliberation Exercises

1/. Move from the Methodology state-of-the-art to Operational Procedures:

- ❑ ***Mobilising the User Communities (M1 & M2 Master GETEDELO UPSay)***
- ❑ ***Assuring the conditions for collaborative work (with 'MIRE' DIGISCOPE)***

2/. Demonstration of the KerDST method & tools:

- ❑ ***Proof of Concept for ETT social acceptability applications;***
- ❑ ***Design and use principles for different steps along the ETT Project Life Cycle***

3/. Testing of the opportunity to engage students in collaborative learning:

- ***Students as potential resources in support of territorial actions;***
- ***Pedagogic value for the students themselves.***

Steps and Tasks in the KerBabel Deliberation Process

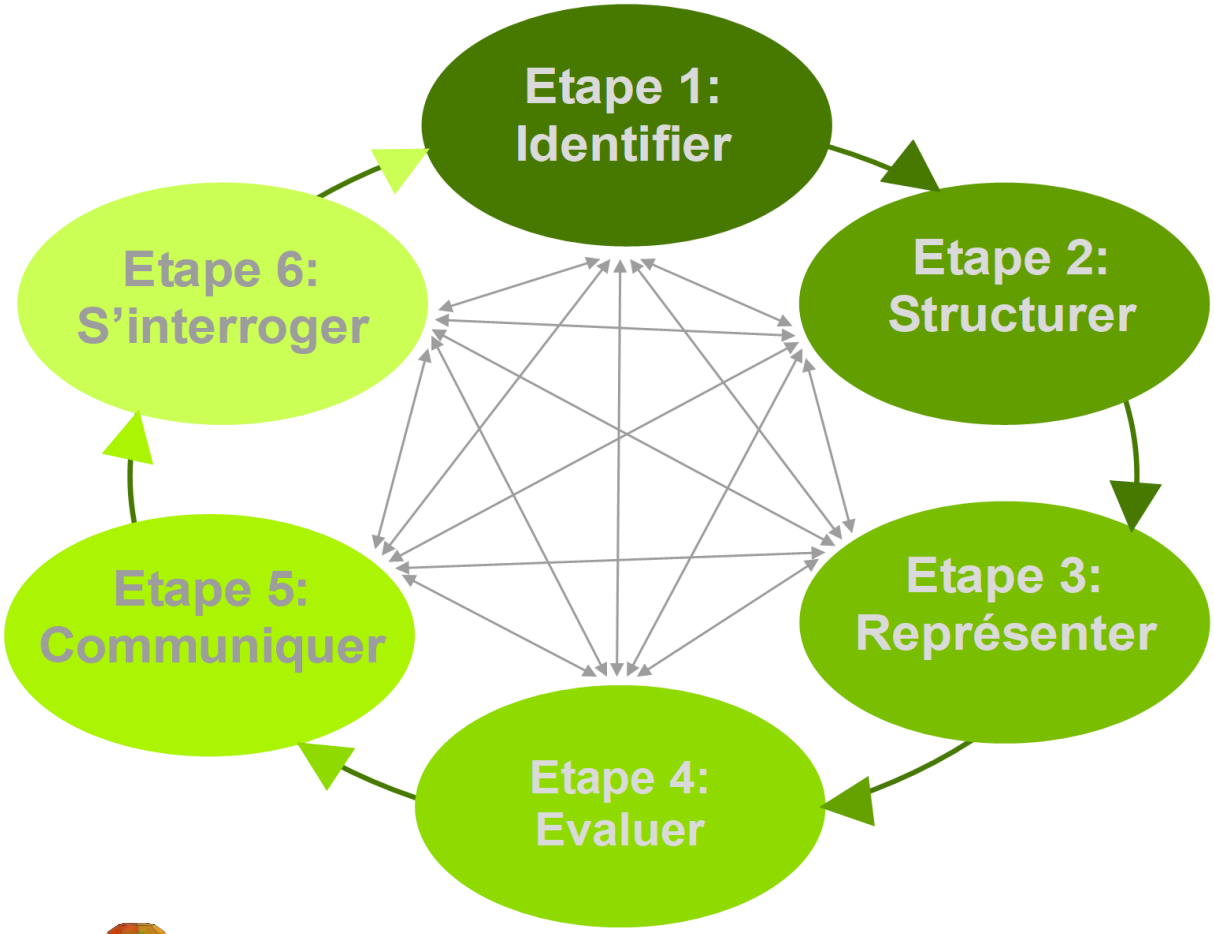
Steps in the Process

- *Build the ETT Evaluation Problem*
- *Compile Catalogue of Arguments*
- *Prepare Argument/Indicator Classification*
- *Mobilise the Arguments to compose the Multi-Actor Multi-Criteria Evaluation*
- *Share/Communicate Results*
- *Discussion/Findings/Lessons*

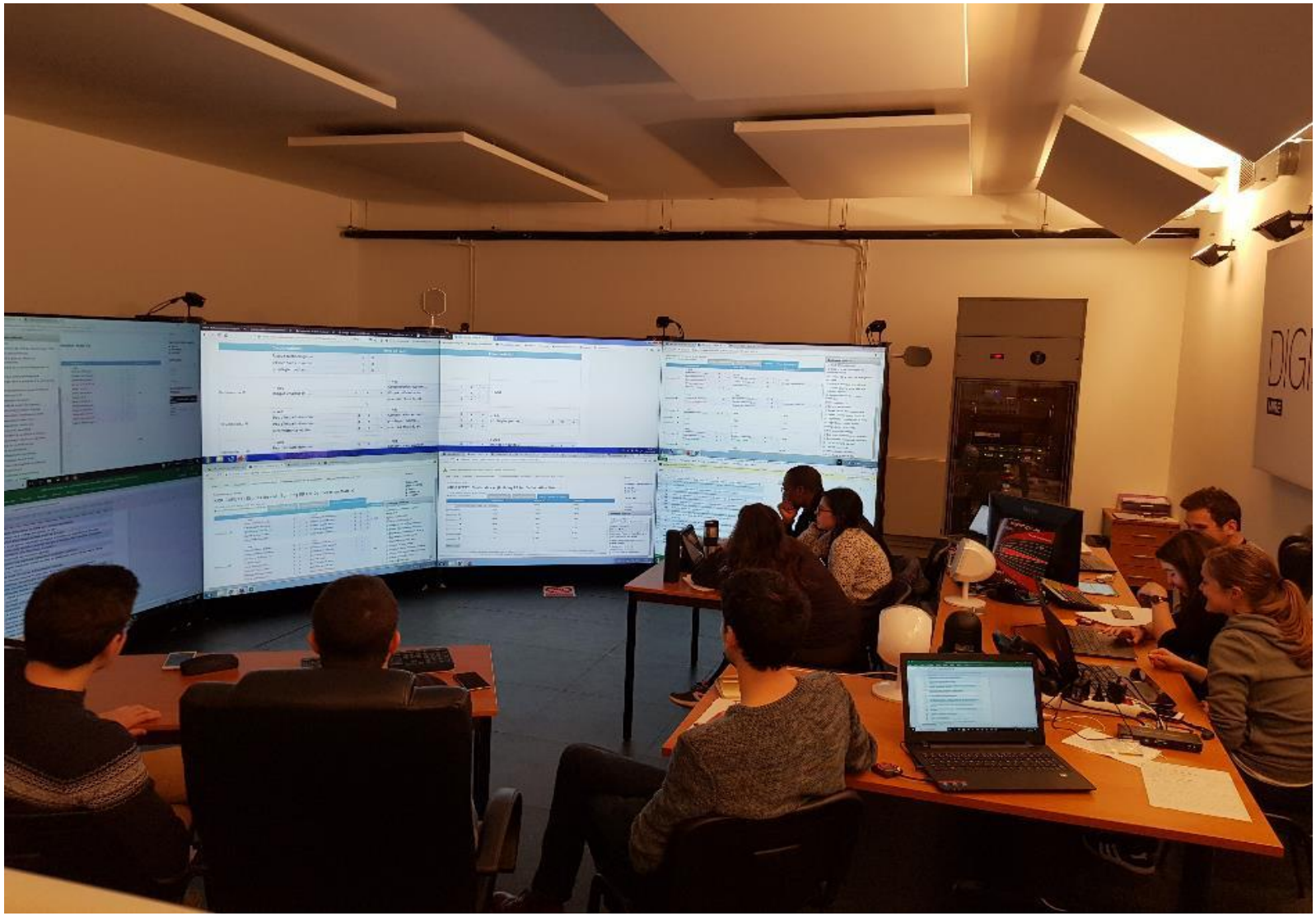
People & Tools

- *The CAFETT Partners - MM and ePLANETe Blue*
- *Students from M1 and M2 Master GETEDELO (UPSay) – Gestion du Territoire & Développement Local*
- *The 'ePLANETe' Deliberation Support Tools – KIK, Representation Rack, KerBabel Deliberation Matrix*
- The DIGISCOPE "MIRE" (Mur Interactif Research Enseignement) at the OVSQ-UVSQ

An Iterative & Collaborative Process – The 'INTEGRAAL' Cycle



Task 3 – Experimental ETT Evaluations



Task 3 – Experimental ETT Evaluations

Experimental Evaluation Exercises

PARC D'ÉOLIENNES BAIE DE ST BRIEUC

RECONVERSION CENTRALE GARDANNE

Evaluation Exercise No.1:
Characterise the BStB Windfarm

Evaluation Exercise No.2:
Compare Gardanne with the BStB Windfarm

Evaluation Exercise No.3:
Compare 3 scenarios for supplying Gardanne

IMPORTATION DE BOIS

FORÊT FRANÇAISE

VALORISATION DE DÉCHETS

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Task 3 – Experimental ETT Evaluations

The experimental ETT deliberations are structured along four main axes:

(1) the **OBJECTS** of evaluation attention (e.g., ETT solutions, sites, strategies, public/ private sector actions);

(2) the framing of the **PERFORMANCE GOALS AND CHALLENGES**;

(3) the identification and roles of the different **"ACTORS" OR STAKEHOLDERS** in the evaluation process;

(4) the types of **INDICATORS OR "SIGNALS" OF PERFORMANCE**.

Attention to these four axes allows us to define specific PROCEDURES for indicator selection, mobilisation and synthesis, moving where — and to the extent — desired from disaggregated stakeholder opinions towards aggregate indices or social acceptability scores.

"Building Knowledge Partnerships" - Sources of the Arguments mobilised in the Deliberation Exercises

3 Sources of 'Arguments'

- *The Arguments provided from MétaMètis.*
- *The set of 2018 'Circular Economy Indicators compiled and managed by Eurostat.*
- *The set of 50 Actions of the French Feuille de Route vers l'Economie Circulaire*

[NOTE: We have chosen NOT to add arguments from our own analyses and interviews]

Classification of Arguments (KerBabel Representation Rack)

Sourcing Knowledge:

- **Types of Knowledge Holders** ***(= dimensions of sustainability system analysis & organisation)***
- **Types of Knowledge Tools** ***(= the 3 different sourcing processes used in CAFETT)***

Mobilising Knowledge:

- **Concerns for Energy Transition Performance or Acceptability (Multiple Criteria)**
- **The spectrum of ETT Sites and/or Scenarios**

Multi-Actor Multi-Criteria Appraisal – Baie de St Brieuc Windfarm

(I) Categories of Actors (Stakeholders)

- L'état français
- Collectivités territoriales (sous-nationales)
- Acteurs de l'économie rurale et maritime
- Entreprises privées des territoires (hors agriculture)
- Riverains
- Des ONG/Associations (environnement, qualité de vie, développement durable)
- Acteurs du monde de la production de connaissance
- Représentant du monde de l'emploi (syndicats…)
- Porteurs du projet.

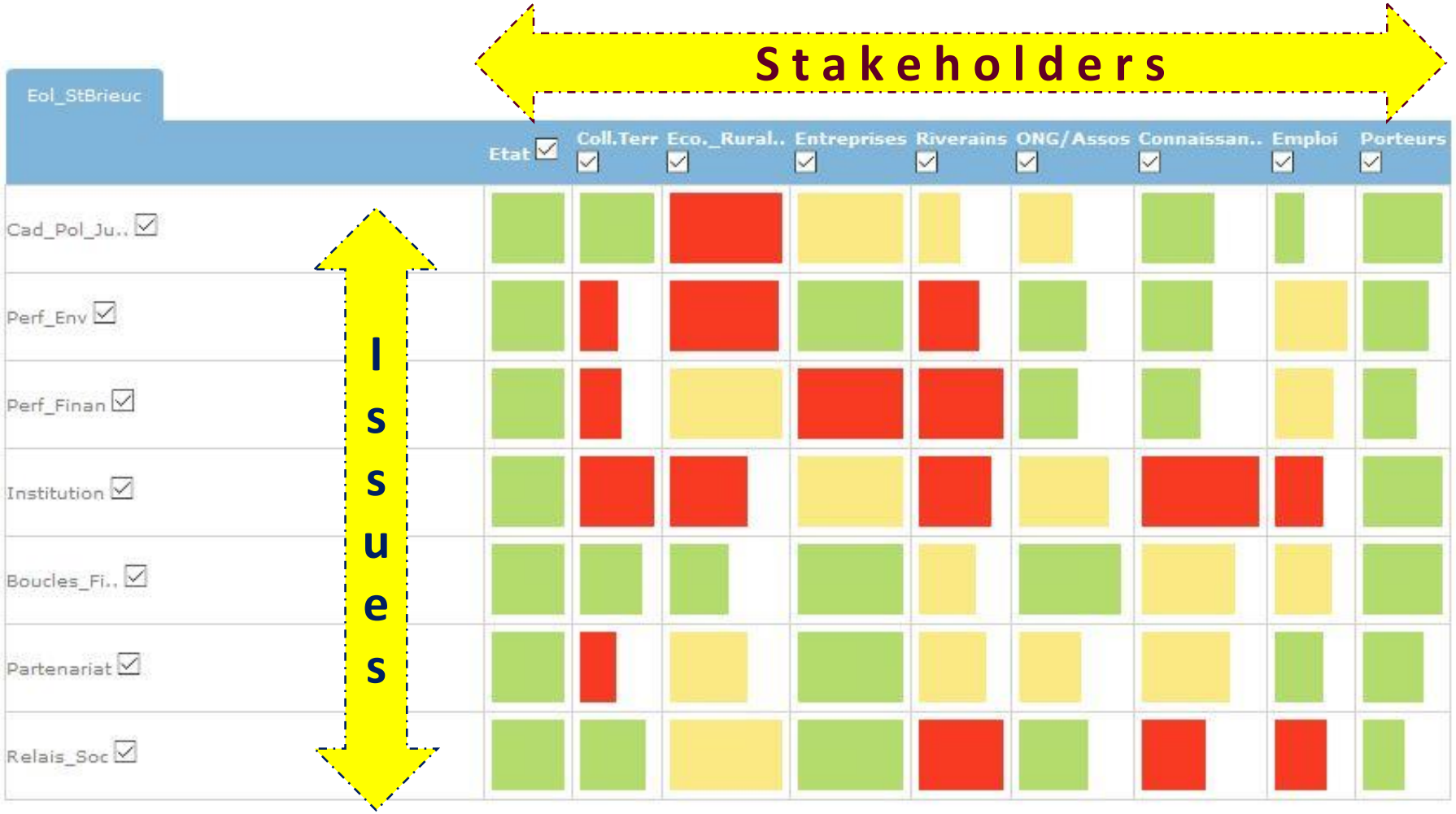
Multi-Actor Multi-Criteria Appraisal – Baie de St Brieuc Windfarm

(II) Performance / Quality Issues bearing on Acceptability

- Cadre politique et juridique (national, international...)
- Performance environnementale (technique, savoir-faire)
- Performance financière (rapport qualité-prix et revenus-coûts)
- Cadre institutionnelle de gestion collective et patrimoniale de ressources environnementales
- Boucle financière nécessaires pour une économie verte durable
- Partenariat opérationnel et solidaire (savoir faire le long des boucles de valeur)
- Des relais sociétaux (facteurs d'acceptabilité, de prestige, d'enthousiasme)

Task 3 – Experimental ETT Evaluations

Multi-Actor Multi-Criteria Appraisal – Baie de St Brieuc Windfarm



Task 3 – Experimental ETT Evaluations

Stakeholders

Issues

- ❑ Cadre politique et juridique (national, international...)
- ❑ Performance environnementale (technique, savoir-faire)
- ❑ Performance financière (rapport qualité-prix et revenus-coûts)
- ❑ Cadre institutionnelle de gestion collective et patrimoniale de ressources environnementales
- ❑ Boucle financière nécessaires pour une économie verte durable
- ❑ Partenariat opérationnel et solidaire (savoir faire le long des boucles de valeur)
- ❑ Des relais sociétaux (facteurs d'acceptabilité, de prestige, d'enthousiasme)

- ❖ L'état français
- ❖ Collectivités territoriales (sous-nationales)
- ❖ Entreprises privées des territoires (hors agriculture)
- ❖ Les acteurs du monde agricole
- ❖ Les patrons de la centrale Gardanne (actionnaires, direction)
- ❖ Les employés (et leurs syndicats)
- ❖ Des ONG/Associations (environnement, qualité de vie, développement durable)
- ❖ Des habitants des territoires (dont divers 'riverains')
- ❖ Chercheurs, enseignants et étudiants

Ex.2 - Comparison : Eoliennes St Brieuc / Centrale Gardanne

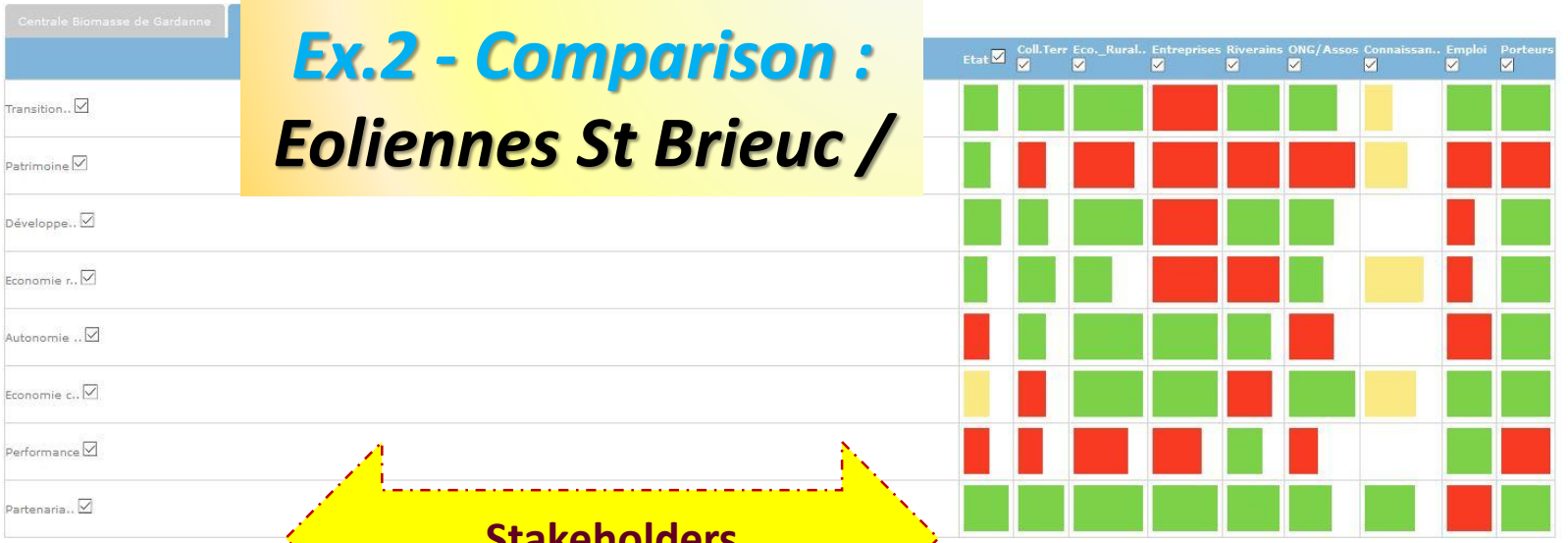
Task 3 – Experimental ETT Evaluations

Issues

Centrale Gardanne

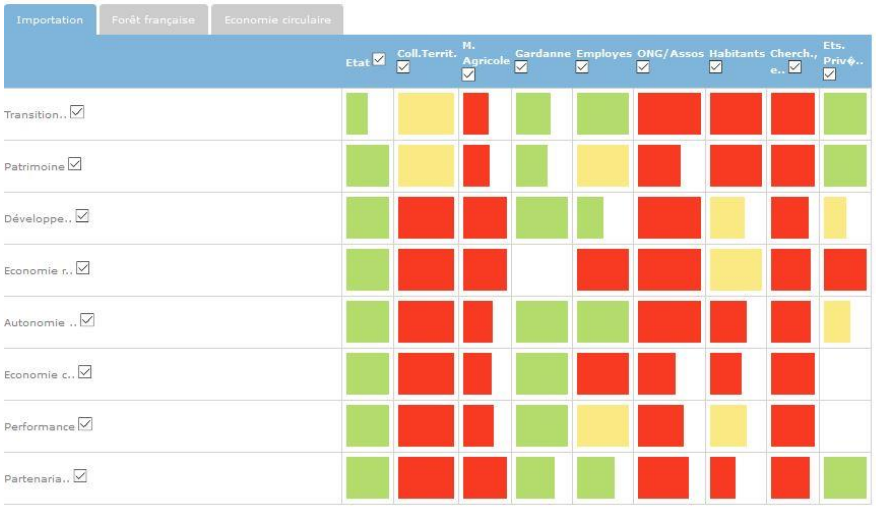
Ex.2 - Comparison :

Eoliennes St Brieuc /



Stakeholders

Task 3 – Experimental ETT Evaluations



PAR ENJEU

PAR ACTEUR

Importation de bois

Forêt française

Les 3 scénarios

Valorisation de déchets

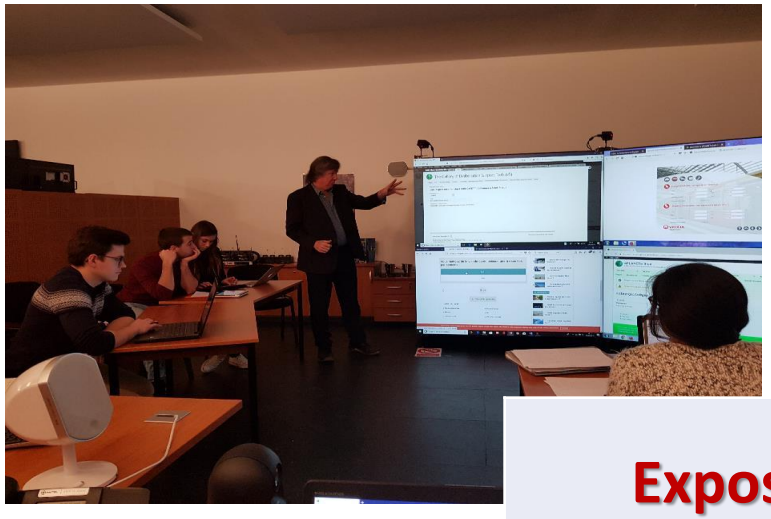
Ex.3 - Approvisionnement Centrale Gardanne

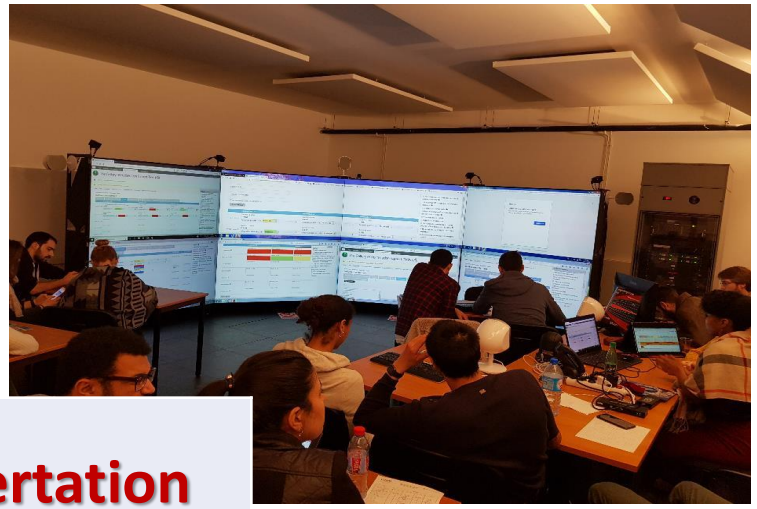
K2bPetroleum

MÉTAMÈTIS

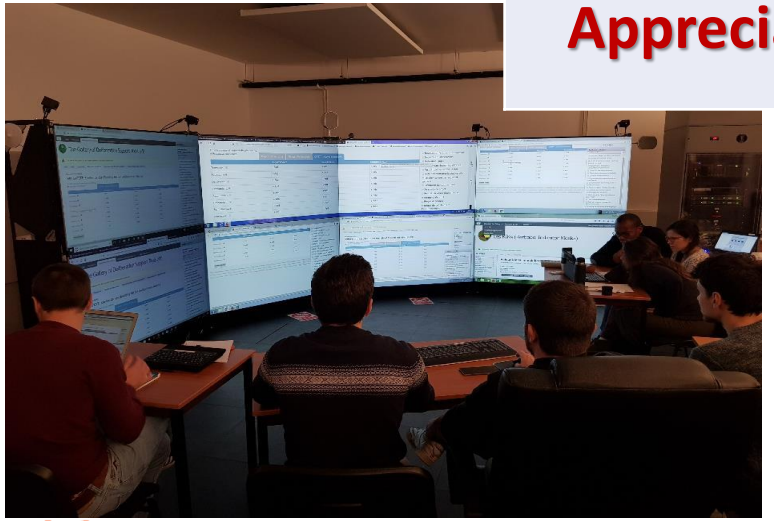
FONDATION TUCK
The Future of Energy

Task 3 – Experimental ETT Evaluations

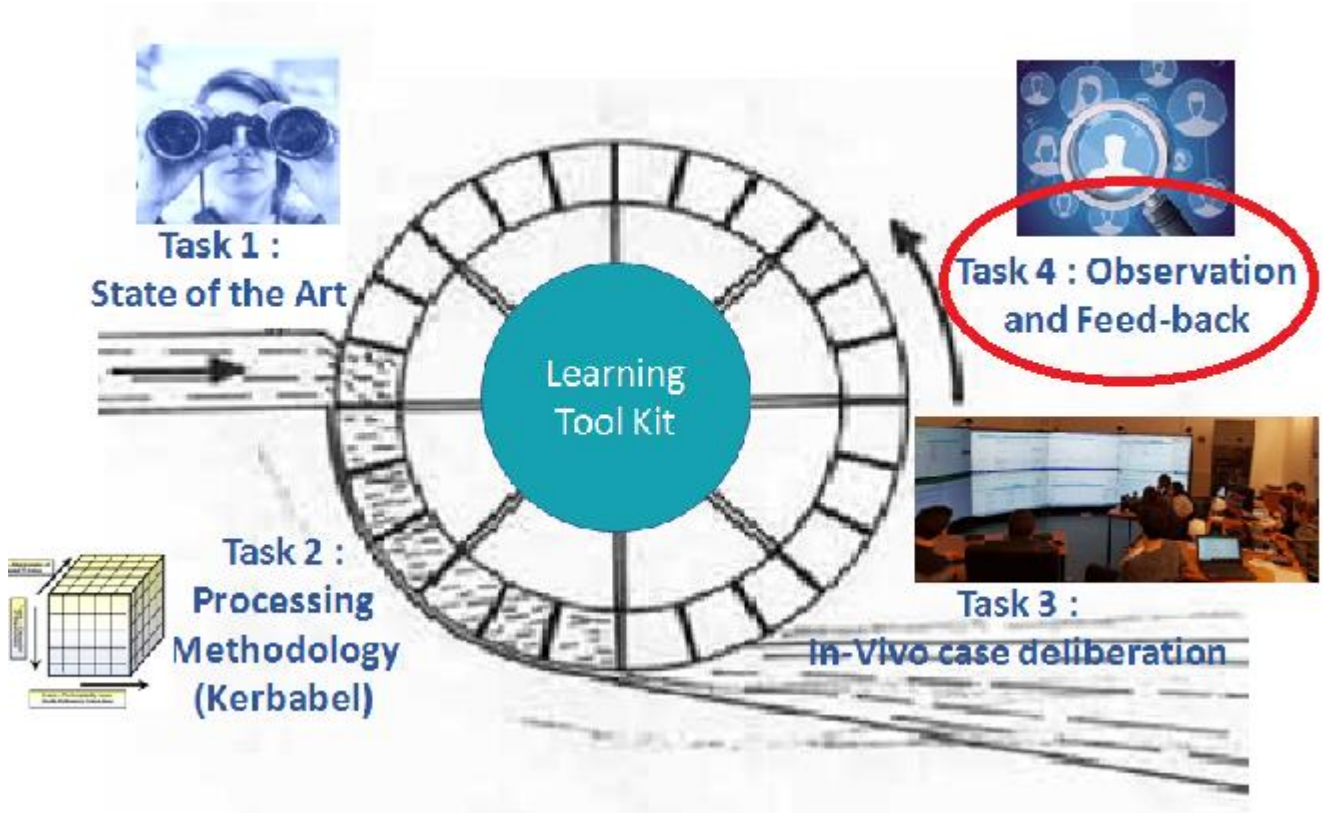




Exposition	**Concertation**
Appreciation	**Restitution**



Task 4- Observation & Feed-Back



Deliberative Process Feed-Back (1/4)

The Multi-Stakeholder / Multicriteria Framework for building deliberations is robust across ETT controversies. ☑ ☑ ☑

- ❑ The Issue x Actor x Scenario framework, informed by « signals » (that is, Indicators & Arguments), is accessible, efficient and effective for building up a « common ground ».
- ❑ This deliberation framework, at several levels, gives a public and « objective » status (recognition) to stakeholders and their concerns.
- ❑ …. These are potentially useful starting points in real-life processes for **Building Trust**.

Deliberative Process Feed-Back (2/4)

The Multi-Stakeholder / Multicriteria Framework for building deliberations can be exploited, in appropriate ways, *at several distinct stages along the ETT life cycle*.

- **Early « Scoping » or Pre-feasibility studies**, providing insight into the issues likely to be critical for the prospects (or not) of building trust and for exploring the conditions for co-construction of project viability.
- **A deliberation support tool (DST) at the design phase** engaging projet promoters, experts and stakeholders in a joint process to provide insight into key points of confrontation and prospects (or not) of compromise.
- **As a DST for multi-stakeholder evaluation of decision options.**
- As a framework for **monitoring and review of project implementation**.

Deliberative Process Feed-Back (3/4)

Our Multi-Stakeholder / Multicriteria Framework can be exploited in several different (non exclusive) ways, with variations along the stages of the ETT life cycle:

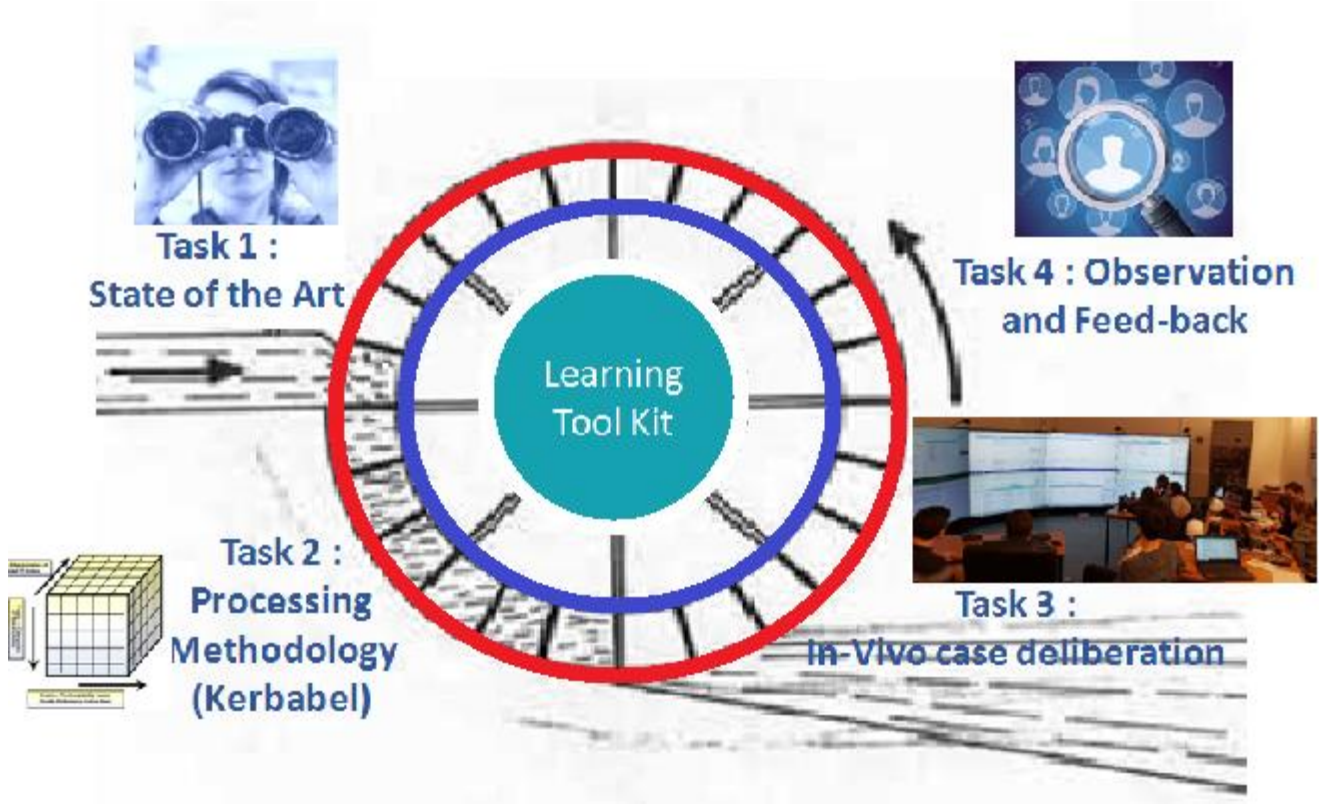
- **As a didactic tool** to support learning and thinking about ETT controversies. By engaging in a structured way on an ETT topic, an understanding is built up of the nature of the challenges & opportunities for co-construction of confidence and acceptability.
- **As a framework for experts' analysis**, seeking to provide reliable in-depth insights into the key points of confrontation, their reasons and the prospects (or not) of compromise.
- **As a tool for structuring in-depth stakeholder deliberation and negociation** in a real project design, decision support and implementation processes.

Deliberative Process Feed-Back (4/4)

We distinguish several different types of deliberation support roles for engagement with ETT Social Acceptability.

- **Diagnostic risk analysis - As a scoping/didactic tool, either in-house or by stakeholder consultation,** to support learning and thinking at the conception stages about of the nature of and perceptions of the project risks = inputs to process design for building confidence/co-construction.
- **Decision support,** as a framework for **experts' analysis to provide reliable in-depth insights** into the key points of confrontation, their reasons and the prospects (or not) of compromise **(e.g., *Débat Public*)** .
- **Structuring in-depth stakeholder deliberation and negotiation** in a real ETT project design, decision and implementation process.
- Contributing to permanent knowledge resources (case studies, indicator catalogues) as societal capacity building (***Observatoire de Controverses***).

Conclusions & Recommandations



ETT Capacity Building (1/2)

Controversy about ETT Projects will remain a permanent feature of the political and territorial landscape. Engaging Stakeholders is not a guarantee of success, but is a necessary condition (co-construction, building trust).

- Priority should be given to **public & private sector capacity building** for efficient and meaningful stakeholder engagement = collaborative learning, negotiation….
- Consultation and co-construction process must advance in visible ways, stepwise with **tangible outcomes for all key stakeholders**.
- The state should not « delegate » political judgments onto agencies providing knowledge and procedural expertise. The role of governance (setting goals, conflict resolution) is **irreducible**.
- The state, at all levels, must guarantee the rules, and must commit at appropriate levels to timely stepwise outcomes (including decisions).

ETT Capacity Building (2/2)

Uses of collaborative on-line deliberation support tools facilitating sharing of experience and engagement on ETT Social Acceptability topics.

Via an *OBSERVATOIRE DE CONTROVERSES* around ETT, users could access information & contribution functions on a permanent platform, including:

- Consulting « Debates » / Contributing (or updating) new Debates…
- Contributing resources into the platform (in the context of contributing to one or more ETT Debates), e.g.
  1/. Contributing Arguments or Indicator Concepts into a KIK;
  2/. Mobilisation of Arguments/Indicators in a Debate;
  3/. Making a Comment relative to an ongoing Open Debate….

These functionalities exist in Alpha and Beta prototype forms within the 'ePLANETe' platform; this could be a design base for full implementation.

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THANK YOU !

contact@neutroclimat.org

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ePLANETe Blue