Citizen engagement in nuclear governance:
A case study of Local Information Committees (CLIs) in France

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Overview of the project:

Deliberative Participation for Enhancing Nuclear Power Decision-making: A Comparative Study of Local Experiences from France, South Korea, and China

Central research question:

When **public inputs** can be integrated into nuclear energy governance, can they make a difference to **nuclear governance** in positive ways?
….If so, **how**, in what **forms**, and **under what conditions**?

Case studies: Three Local Participatory Models

France	China	South Korea
CLIs 	**"Wang Jiang Si Lao" of Pengze nuclear project** 	**The "One Less Nuclear Power Plant Policy", Seoul** 
Citizen science model	**Elite citizen-led model**	**Local government-led model**

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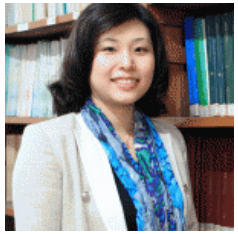

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I. Background of the French case study

1. Nuclear in France

1) **78%** of French electricity generation; major role - French **low-carbon** electricity mix. France is the **most nuclearised** country in the world in terms of the share of nuclear in electricity mix (IEA, 2016)

2) **58** commercial nuclear reactors + one under construction. Installed capacity: 63 GW; nuclear electricity generation: 434 TWh, (2015)(IEA, 2016)

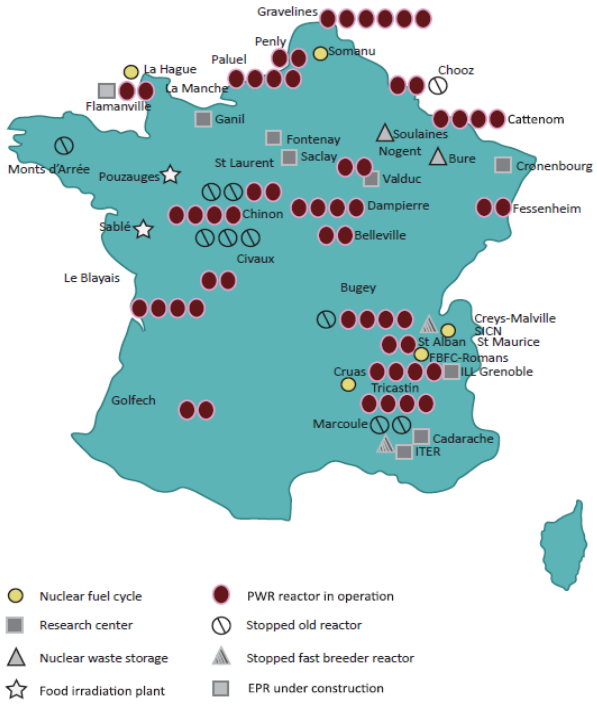
3) **Long** nuclear history: first nuclear plant – 1970s; France's nuclear fleet is **reaching the end of its initially licensed lifetime** (IEA, 2016)

4) **Post-Fukushima** nuclear decision:
   - **stress tests** conducted, **safety improvements**
   - and political decision to **reduce nuclear to 50%** of electricity supply by 2025 (date to be confirmed)
   - more **RE** (40% of total electricity generation by 2030 + **energy efficiency** (IEA, 2016)

2. Local Information Committees (CLIs)

35 CLIs in France (2016)

Figure 2: Map of the French CLIs (including map of nuclear reactors)[16]



(All nuclear facilities possess a CLI. Some CLIs cover several operators)

- **Every** site that comprises one or several **nuclear installations** is required to set up a CLI
- nuclear reactor plants, waste storage facilities, radioactive waste reprocessing plants, and other nuclear installations)

(Source: Foos and Gilli, 2013)

1) Dual missions:

- **providing information** to the public, and
- **monitoring** the environmental impact of nuclear installations

2) Governance:

- The enactment of the **Transparency and Nuclear Safety (TSN) Act in 2006**: provides a legal basis for CLIs

3) Membership is pluralistic:

Four main stakeholder groups:

- (i) local elected representatives,
- (ii) representatives of environmental protection associations
- (iii) representatives from nuclear industry trade unions,
- (iv) and scientists and qualified persons

3. Institutional contexts and policy traditions

i) The French institutional framework cannot be characterised in simple ways

ii) France is known as a country – very **centralised**, **bureaucratic**, and with "***elite*** character" (The prominence of technical elites in French politics)

iii) French nuclear governance system (as well as the political system as a whole) – a growing emphasis on **transparency, independence…**

iv) And **participation**

v) Nuclear regulator and agencies have undergone **organisational reforms; institutional trust** - enhanced

–**Nuclear Safety Authority** (ASN) – The 2006 TSN Act: ASN as an **independent** nuclear regulatory authority

- ANDRA (the French national radioactive waste management agency) – still under government control, but **autonomous** from nuclear operators; financed by polluter-pays principle

Public consultation and information bodies relevant to nuclear

Local Level: CLIs

National Level:

1. the **National Commission for Public Debate** (since 1997)

1. **The OPECST under the Parliament** (Parliamentary Office for the Assessment of Scientific and Technological Options)

2. **A High Committee for Transparency and Information on Nuclear Security** (HCTISN)

(Sources: Aparicio, 2007; Didier, 2011; Foos and Gilli, 2013)

II. Key concepts

(1) Nuclear power as a governance challenge of engaging the public

a) **Problem of time scales.** The contrast between the time scale of **large energy infrastructures** (including nuclear power plants), typically of the order **of several decades,** and the emergence of unexpected irruptions of **digital** social movements (can be in the order **of a few minutes**).

b) **The role of state and energy autonomy** (in the context of public distrust). Large energy infrastructures rely on **large investments (and/or are "critical infrastructures")**, pushing **decision to national** level. But **citizens/ "prosumers"** generally assume a more **proactive r**ole in energy choices and decisions as renewable energy sources and Smart Grids technologies continue to develop.

c) **Effective engagement is a mission impossible?**

- A contrast between the direct and significant **impacts** of citizen actions in energy project planning and implementation generally (e.g. project delays due to **blockage** of construction sites) and the relative **moderate level of public concerns on energy** and environment when compared with for example, **economic, housing, and education** issues.

- **Citizens may not be ready** to express their views in **early** stages of policy/ project development but they may **react strongly in later stages** when government/ project proponents' decisions have **less flexibility** to adjust.

(2) Deliberative participation

- A form of PP based on **deliberation**

- **Empowerment** of a more *informed* citizenry to *discuss, debate, and reflect* on energy issues (Abelson et al., 2003; Petts, 2004).
- to promote **public use of reason and arguments** (Bäckstrand, 2003)

- **Social learning** - the integration of **diverse social knowledges, values,** and meanings in order to better inform the substance of social choices (Stirling, 2005)
- by drawing upon the **knowledge of all members** of a community (Healey, 1992)

(2) Citizen science

a) Definition:

- Rather than top-down scientific expert knowledge, citizen science is a science that is **developed** and **enacted** by the **citizens** (who are not trained as conventional scientists) through **participatory** practices (Bäckstrand, 2003; Dickinson and Bonney, 2012).

b) Rationales:

- To **increase scientific literacy** (public understanding of science)
- To **increase interest** in and knowledge about a range of nuclear issues
- To increase **capacity** for people ***to assemble the tools and data*** needed to move towards a level of scientific understanding that promotes ***autonomous, informed choice*** civic empowerment (Dickinson and Bonney, 2012)
- a solution **to reverse the growing public distrust** in science and governments

c) Many forms: **e.g.** Volunteer bird surveys, meetings, Local communities/ individuals/ NGOs.

III. Preliminary Findings

Finding 1: CLIs contributed to the production, validation, dissemination, and application of scientific knowledge

Production

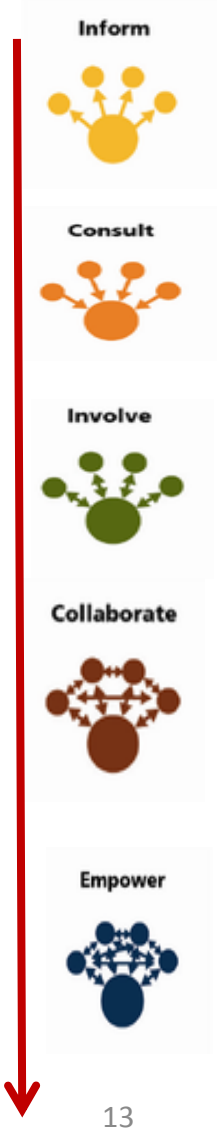
Validation & Watchdog

Dissemination

Application

Main activities and examples

1) organise **regular meetings** between representatives of the **authorities**, the **community**, and the **public.** - **listen** to the requests of citizens, and facilitate public **discussions**.
2) **analyse reports**, documents and evidence which are accessible to them
3) **initiate investigation** on any issue relating to the management of radioactive materials and waste;
4) Raise questions to, and **request information** from, operators, the ASN or the IRSN
5) organize **monitoring** activities or programmes of radiation
6) Invite **ACRO** (an NGO measuring radioactivity) to co-develop **environmental monitoring indicators** – a way to translate technical indicators into a form that is comprehensible to laypersons
7) **establish "registries"** – e.g. a **regional cancer registry** run by independent doctors, funded by the 3 CLIs in La Manche on their own budget (Euro 1000)
8) **commission their own consultants**/ (invite **counter-experts** to counter-check data and evidence, etc.);
9) CLIs can make a **paid appointment to scientific advisors** (e.g. in Areva La Hague CLI, from 1981-2014)
10) Present information, view, and findings in **easy-to-understand** leaflets and documents which are publicly accessible.
11) **Produce recommendations** (on scientific, technical, and/or organizational aspects) for operators
12) CLIs's **recommendations**, at least in some cases, were **adopted** by the operators. ASN played a role in ensuring CLIs's recommendations, which are justifiable, to be implemented.



(Arnstein, 1969; Kobayashi, 2004)

CLIs: some main activities

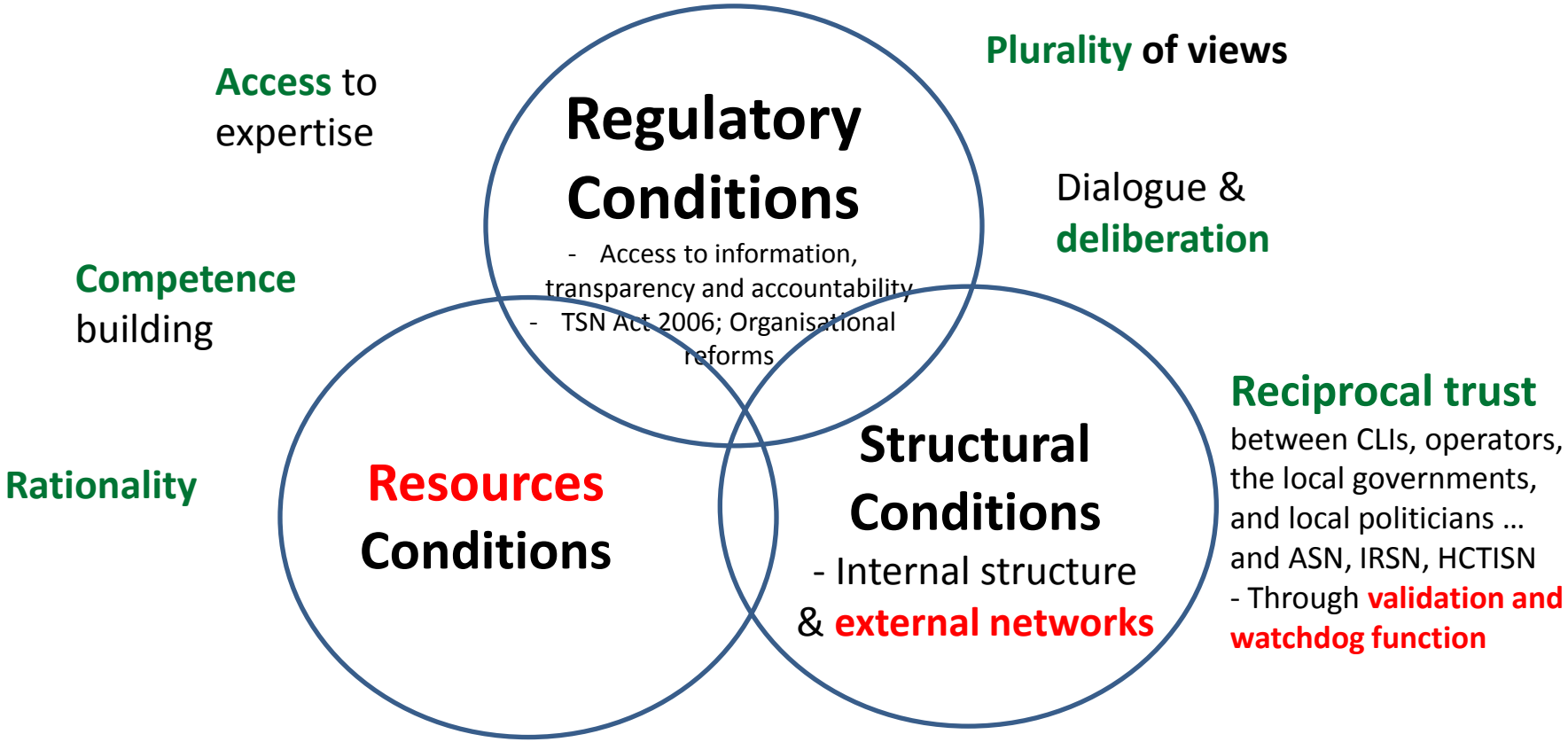
Organising various meetings - Presentation of reports by nuclear operator and the regulator

Questions and opinions of a CLI were given to investigating commissioner

(Photo from Yves, 2012)

Finding 2: CLIs are a French *institutionalised approach* - that has integrated citizen participation into nuclear regulatory framework, funding mechanisms, and actor networks

Favourable conditions and the mechanisms of the CLI model



Favourable **resource** conditions:

1) CLIs have a **budget allocated** by the State and regional governments

2) Expenditures of each CLI are funding by:
   a) largely from the General Council for departments (a local administrative unit),
   b) ASN;
   c) various other institutions e.g. rural and urban communities

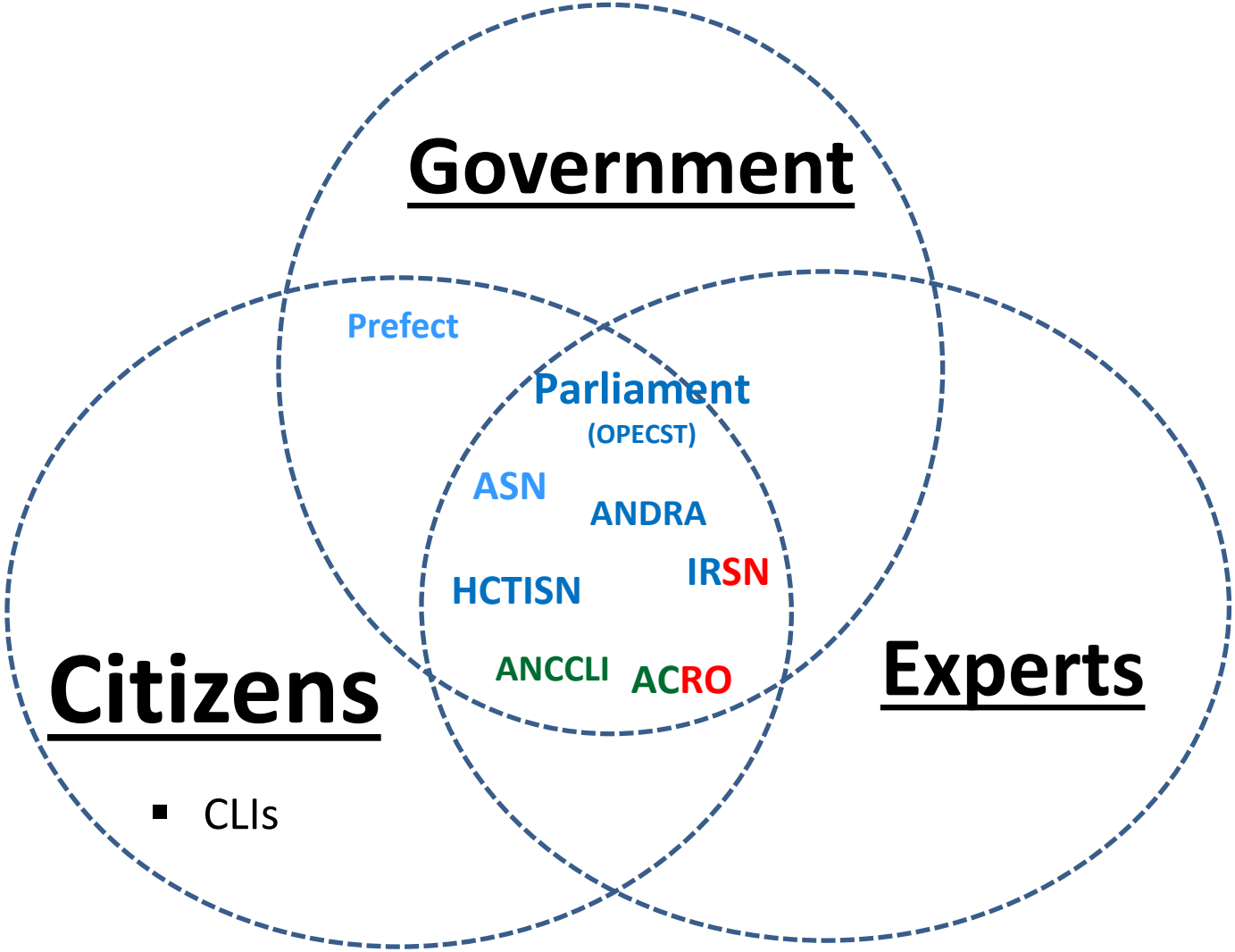
3) For the 3 CLI in the Department of La Manche, the annual budget is around 100,000 euros.

4) What can they do: CLIs can conduct expertise, epidemiological studies, measurements and analysis, even appoint scientific advisors

Favourable structural conditions:

CLIs serve as a nucleus of a network of information/ expertise providers

… and there are many spanning actors



- CLIs

Examples

CLIs, through the ANCCLI (the national federation of CLIs)
can access to IRSN, and HCTISN…And foster partnership based on reciprocal trust

ASN

- Regular meetings with the ASN
- Annual meeting with the Chairman and Commissioners of the ASN
- Presence in many WG and EWG : PNGMDR, CODIRPA, radiation, iodine, tritium, FSOH, urbanization, GPRAD, ...
- ANCCLI co-organizer with ASN of the National Conference of CLI

IRSN

- Monitoring Committee ANCCLI / IRSN since 2005
- Many events organized together (ECS, HAVL, Childhood leukemia...)
- Promote technical dialogue
- Support for dietary surveys conducted in partnership with the CLI
- Provision of CLI the opinions, knowledge, assessments ... provided by IRSN

HCTISN

ANCCLI is a member of HCTISN

Participation in plenary sessions and working groups of the HCTISN

Partnerships approach ACN (Aarhus Convention), ECS and more recently on the HAVL file

(Yves, 2012)

Finding 3: CLIs's model made positive impacts at local/ project, industry, and societal levels

(a) At local/ project level, e.g.:

- Improved **scientific literacy**
- Partially addressed the problem of **information asymmetry**
- Improved **safety standards and environmental conditions**
- Recommendations taken into consideration or **implemented** by nuclear facility operators/ governments (e.g. relating to sub-contracting arrangements)
- e.g. in CLI-Flamanville, an expert questioned the siting of the emergency back-up diesel generators (Foos and Gilli, 2003)

(b) At ***industry*** level

- EDF, the sole nuclear operator, develops a more **inclusive** relationships with local citizens
- EDF did try new way of **partnerships**:
- E.g. in developing surveys – EDF invited stakeholders to choose experts and develop survey questions together
- E.g. La Hague, Manche – a reprocessing plant
  - In response to a concern raised by a medical doctor – the number of cancer cases appeared to be too high
  - A nuclear partnership between project proponent and local people: set up an **evaluation committee** to conduct experiments and to evaluate what have been going on

(b) At ***societal*** level

- CLIs can raise issues at national level through e.g. **ANCCLI**
  - ANCCLI published findings of various CLIs on nuclear waste, and consolidated a strong position in the **public debate** on nuclear waste.

- Occasionally, if not rare, CLIs can raise questions to High Committee for Transparency and Information on Nuclear Security (**HCTISN**) at national level if they are not satisfied with answers provided by local reps of operators

- HCTISN - to provide information; to facilitate debate and dialogue related to nuclear activities

(Pervès, 2013; Sene, 2006)

Concluding remarks

1. Broad **context** of the French case study; CLI **acted** as a **producer** of civic science; **mechanisms** of its working – and the associated **favorable conditions**; examined the **impacts** on the local/ industry/ societal levels.

2. There is a need to sufficiently recognise the public inputs of the CLIs; we also need to develop a **critical** perspective of the CLI model.
   - Lack of evidence that **scientific literacy** and **interest** in the subject matters is improved **beyond the CLIs** into the wider local community/ general public
   - Limited evidence that there is an integration of CLIs projects **from small scales into larger scales, from local to regional/national** levels
   - Political tensions remain. The existence of **local support** for an energy option is not the same as building **public support** for it.(CLIs are not tasked with opening up nuclear options)

3. CLI model alone is far from adequate to address governance challenges of nuclear power in France.

Q: To what extent the CLI model can be transferred to other countries ?

Q: Moving citizen engagement from local levels to the national level?