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► To cite this version:

Louise Dorison, Laurence Rocher, Antoine Fontaine. The right price of heat. The district heating user, an ambiguous energy consumer?. Third international conference on energy research and social science, Jun 2022, Manchester, United Kingdom. halshs-03705139

HAL Id: halshs-03705139

<https://shs.hal.science/halshs-03705139v1>

Submitted on 27 Jun 2022

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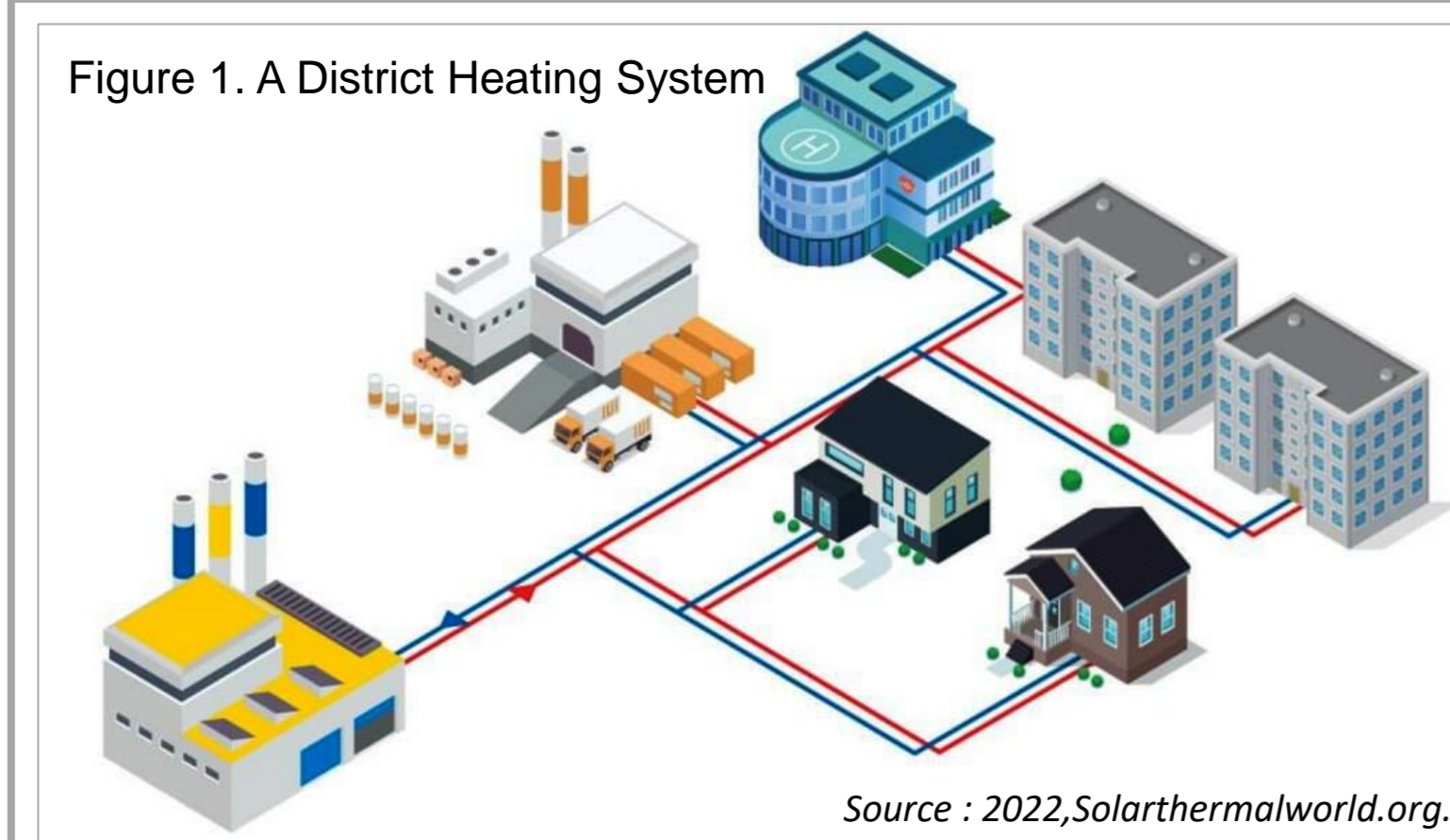
The right price of heat. The District Heating user, an ambiguous energy consumer?

Source : 2022, Vénissieux, Les Minguettes, ISA Drone



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Energy transition policies sparked renewed interest in district heating (DH) systems which had until recently been considered outdated and energy wasting. **Recent change in billing rules** transformed this representation and made both this technology and social housing a key element of energy transition schemes. This new rules embodies the political idea that residential energy consumption should be used as a lever for energy policies. This framework required updated regulation which led to an underlying **modification of the status of DH users**. Initially shaped as a **collective and solidary solution** which responded to **social concerns**, the updated running of DH systems however raises outstanding questions about the **socio-economic justice** : Is paying for the individual consumption the fair price ?



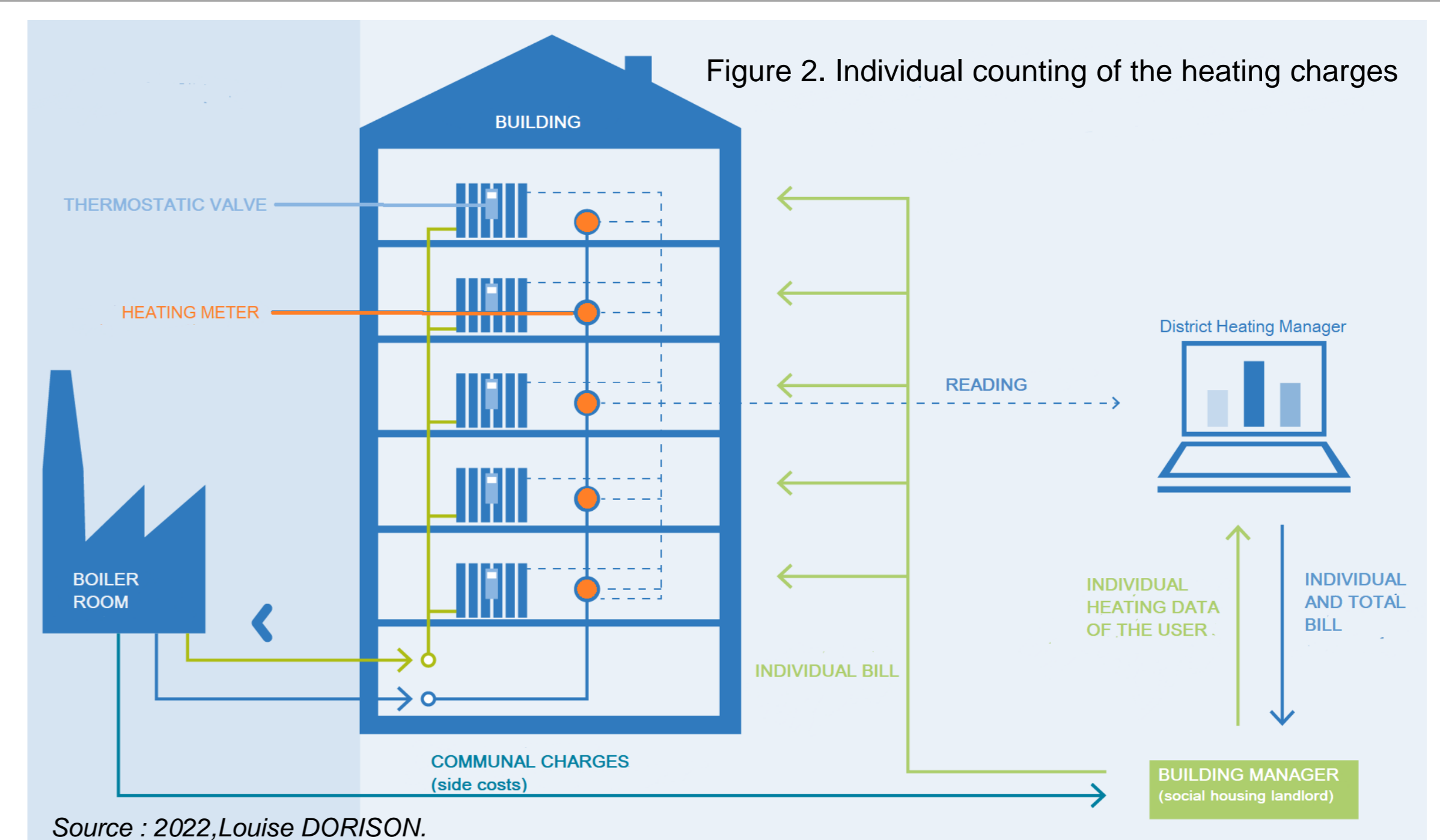
Source : 2022, Solarthermalworld.org.

Social Housing buildings are most often equipped with collective heating systems. **The social housing landlord** pays a subscription to the **heating network manager**. This cost, integrated into collective charges, is afterward equally divided between **tenants**.

A NEW BILLING RULE

The article 9 of the **European Energy Efficiency Directive (EU 2018/2002)** changed this system by enforcing the **individualization of the heating costs**. Inhabitants since then pay for the amount of energy they have consumed.

Calculating individual energy consumption requires the installation of **dispensers or heating meters** (depending on the shape of the apartment block) in each apartment.



Source : 2022, Louise DORISON.

The implementation of the measure in social housing Fieldwork carried in Vénissieux, 2021



Empirical results: the non application of the measure in Vénissieux.

Technical and economical incompatibilities:

- Heating costs individualization **incompatible with the system built to be collective: often impossible to measure the heating consumption per apartment.**
 - The cost (the installation of dispensers or heating meters): often **exceed the expected gain (both economic and energetic).**
- **Thus, a lot of buildings exempted.**

Political and social reluctances:

- Opposition of the social housing landlords (cf. figure 3): the measure drifts apart from the foundational social dimension of the system which guaranteed equal price and supply for all tenants.
 - Local actors are worried about a reinforcement of **inequality between tenants, turning thermal inequalities into economical ones**. This is especially problematic for social housing which targets low-income households.
- **Dissonance with the initial collective and solidary functioning of the system.**

FROM USER TO CONSUMER

Concurrently, this measure **accentuates individual responsibility and the energy saving injunction**, in line with the widespread discourse on energy transition. The social housing tenant who used to be a beneficiary of a collective and social system would **henceforth be a consumer whose custom habits have to be regulated and surveyed**.

- However, while the device is being set up in DH systems in France, the users are excluded from the process while they are supposed to be accountable for it. In the cases here studied, the heating meters are hidden (in a landing sheath) and inaccessible to the tenant. To read their consumptions, they must contact the heating manager on their own while the regulations about the follow up transmission remain unclear.
- It seems **consequently paradoxical that the user is supposed to be at the same time responsible for his energy usage but without actually have a control or information on it**. The measure, carrying praiseworthy environmental ambitions, is worsen the democratic deficit of the environmental issue since the user is on the whole **unable to be part of the decisional and technical running** of such infrastructure.

The user is missing from the beginning of the regulations to the technical implementation of the measure.

The **absence of the user** further deteriorates the soundness of this measure which was already built on **two erroneous premises: the device's socio-technical dimension and the relative responsibility of the user**.

- **A supposed sociotechnical dimension:** The heating meter aims to incentivize the user to change his consumption behavior (Akrich,1991), as if a technical object is enough. Yet we are facing the **inconsistency of the demonstration**.
- **The misreading of the user's behavior and responsibility** : Elizabeth Shove's research shows the **relative efficiency** of the device in its ability to modify energy habits as they are **part of a routine system on which the individual has no stranglehold**. Not much behavior changes are indeed possible, and, in the end, it is more about **modifying the energy link of the users** rather than their behaviors. (Lévy, 2018)

→ **This device appears symptomatic of a transition first rested on technicity without enough regard to human and social sciences.**

Figure 3. Pattern of the measure in France and its actors.

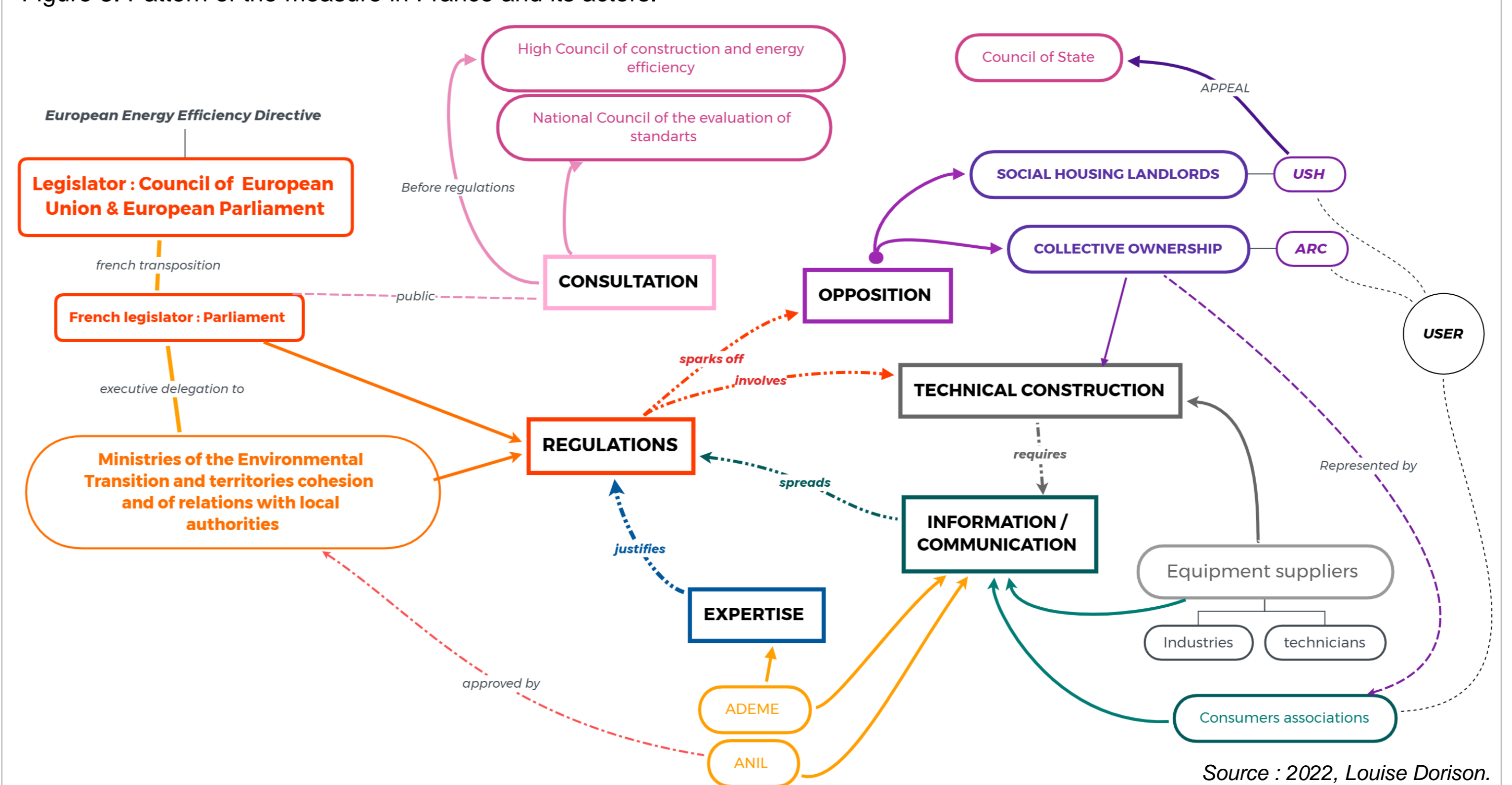


Figure 4. Table of the variable shares by member states. Source : 2019, ADEME.

Member State	Variable share	Fixed share
Austria	Min 55% - max 75%	Min 25% - max 45%
Bulgaria	On the basis of individual heat meters reading	The heating system heat losses divided on m ²
Czech Republic	Min 50% - max 70%	Min 30% - max 50%
Denmark	>40% of the total heating cost (including DHW)	<40% of the total heating cost (including DHW)
Estonia	Not specified but typically between 40 and 60%	Not specified but typically between 40 and 60%
France	70%	30%
Germany	Min 50% - max 70%	Min 30% - max 50%
Italy	Voluntary heat consumption	Voluntary heat consumption
Lithuania	Unclear	Unclear
Poland	Under discussion	Under discussion

Elsewhere in Europe : A DISPARATE DEVICE.

• If it is possible to look at the difference of energy consumption before and after the heating meter fitting, it did not allow an empiric measure: for the moment, **impossibility to link quantitative and qualitative data**. Thus, **impossibility to value the impact of a technical device on the energy user's behavior**.

• **A disparity with the methodology used to quantify the gain**, thus making any comparison impossible on a European scale: the studies are not even comparing the same object since each state **has its own type of housing and regulation**. They all present technical differences but also disparity in legal maturity: for instance, in France the rules is defined but its implementation yet did not occur.

→ **A gap between the measure designed on a European scale with a political will of homogenization for an equal effort in the energy transition and its disparate implementation.**

→ **A paradoxical gap reinforced by the fact that each state has its own variable and fixed shares of the heating cost (cf. figure 4.), illustrating how the individual and supposed fair price of the heat can be changeable and, in the end arbitrary rather than equitable.**