



An Energy Justice Exploration to the Revival of the Solar Thermal Energy in France

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Abstract At a time when the French authorities are defining the future energy and climate programme law, the question of diversifying renewable energy sources is being raised more than ever. In this context, the revitalisation of the solar thermal sector seems to be the ideal solution. The energy justice framework should provide a useful prism through which to determine the legal restructuring of this sector, which, despite many expectations, is not yet fully operational. The means by which individuals gain access to the services offered by solar thermal technologies (e.g. financial support) should then be examined. The aim would then be to avoid a perception of social injustice for the most vulnerable households. Solutions for procedural justice (access to information) and distributive justice (subsidies to households) need to be rethought and better defined. Finally, the measures taken by the French authorities over the last ten years have probably not been sufficient to make the consumer a key actor in the production of solar thermal energy.

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9.1 INTRODUCTION

Until recently, the French public authorities have shown little interest in the solar thermal energy sector. In the context of the energy crisis, characterised by unstable market prices and heavy dependence on gas and coal exports, there is a desire to revive a promising sector to meet the objectives of the energy transition. Solar collectors convert the sun's rays into heat. The potential of the solar thermal energy sector is very real. It has at least three major advantages. Its applications meet domestic needs (production of hot water, heating, cooling of buildings), economic needs (production of heat for industrial purposes, supply of heat networks) and sustainability needs (they produce little CO₂ and their components are made of recyclable materials). The production and consumption of this renewable energy should benefit everyone: industry, to decarbonise the production of heat in industrial processes; local authorities, wishing to invest financially in collective heat consumption projects; and individuals, for their own consumption.

Yet, the global market for solar thermal energy is uneven. It grew by 3% in 2021, but with a clear dominance of China and significant growth in some national markets.¹ So far, the French market has lagged behind. Solar thermal accounts for only 0.2% of heat consumption with the latest figures being encouraging,² but the market remains unstable.³ Now, the recovery strategy is not unique to France. Some European countries have been progressing for more than a decade,⁴ while the EU shows no willingness to structure this sector legally and politically. The attention of public authorities would be focused on the individual production of

¹ Solar Heat Worldwide, Global Market Development and Trends 2021 Detailed Market Figures 2020, IEA Solar Heating and Cooling Programme, May 2022, éd. 2022.

² *Ibid.*, For example, the French national market is a leader in hybrid solar installations—photovoltaic and thermal.

³ <https://www.ecologie.gouv.fr/solaire>.

⁴ Solar Heat Worldwide, Global Market Development and Trends 2021 Detailed Market Figures 2020, *op. cit.*, the report cites the example of Italy.

renewable heat. This sector is based on a virtuous household model. The LCOE of thermal installations in individual dwellings is 90% of the initial investment.⁵ While the individual use of solar thermal energy requires an investment cost, it is rapidly offset. First, cost stability is guaranteed; for example, solar energy is a free and renewable source and the infrastructure is reliable over time. Second, solar thermal energy covers 70% of the demand for hot water and 50% of the demand for heating. Economies of scale are therefore possible.

9.2 UTILISING THE ENERGY JUSTICE FRAMEWORK IN ANALYSING FRANCE

The energy justice framework offers a relevant prism through which to study the development of solar energy. In particular, the means by which individuals gain access to solar thermal technologies raise questions about forms of distributive and procedural justice. Reducing inequalities requires a coherent and clear national investment policy to support this sector economically and legally. These inequalities become social injustices as soon as the public authorities do not intervene to reduce them or even to guarantee the exercise of the rights of certain social categories.

But this situation is paradoxical. The public authorities were quick to try to stimulate the French solar thermal market. Among the solutions implemented was financial aid under the ADEME's "Plan Soleil" (late 1990s) for the installation of "solar water heaters" in homes and eligibility for a tax credit for these installations. In the same vein, public authorities had set themselves the ambitious target of increasing the share of renewable energy in final heat consumption to 38% by 2030. Within the framework of the future annual energy programming, a political and normative acceleration should be envisaged in order to achieve these objectives.

Besides, the current situation leads to a dependency on certain renewable energy production technologies, whereas diversification would be desirable. This is due to the fact that French public authorities have undoubtedly heavily focused on other solar energy sectors to the detriment of thermal energy. For more than ten years, the public authorities

⁵ ADEME, *Coûts des énergies renouvelables et de récupération en France* Edition 2022, May 2022.

have been implementing public support measures and creating sophisticated legal mechanisms to safeguard the renewable energy sectors, with a clear focus on photovoltaic solar energy (self-consumption mechanisms, contractual purchase obligations or additional remuneration techniques, tax measures, financial aid, etc.). All this has led to its exponential growth.

9.3 CONCLUSION—POSSIBLE SOLUTIONS FOR FRANCE

The question is therefore not so much about how to address injustices, but rather how to restructure an existing sector which, despite many expectations, is not operant. In order to avoid the perception of social injustice by most vulnerable households, it would then be ideal to provide them with direct financing for solar thermal installations. Replacing a subsidy in the form of a loan with a premium paid by the public authorities would be a fair and just solution, as the benefits would be felt immediately. However, this system is dysfunctional⁶ (lack of information, long processing times for applications) with serious consequences on most vulnerable households.

A procedural justice approach would reveal the lack of information of citizens on the possibilities offered by solar thermal energy. The debate is not, or not sufficiently, focused on renewable heat. Evidence of this is the absence of solar thermal energy from the discussions at the Convention citoyenne pour le climat in 2019. All this raises the question of recognising a right to access energy services at the highest level of normativity. The issue is not new. Many observers have argued in this direction. It would be a right of access to all energy services to meet energy needs under economic and social conditions that are favourable to individuals, including households experiencing fuel poverty. This right could be complemented by a right to be informed about the means available to produce energy at low cost, including solar thermal.

Procedural justice is essential to ensure that everyone has access to solar thermal energy services. There is one main lesson to be learned from the failure to develop solar thermal energy in France. The measures taken by the public authorities over the last ten years have not been sufficient to democratically decentralise the production of solar thermal energy.

⁶ Decision of the Défenseur des droits n°2022-199, 14 October 2022.

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