

The use of measurement for specific operations in France's white certificates scheme

Policy background

The [French White Certificates Scheme](#) created in July 2005 is an Energy Efficiency Obligation Scheme (EEOS). Each year, energy suppliers, the obligated parties, invest between 3 and 4 billion euros to meet their energy savings target. 80% of the production of White Certificates (WhC) is based on standardized actions (monitored with deemed savings) described in factsheets published in decrees of the Energy Transition Ministry.

To encourage more innovative, larger or ad-hoc energy-saving actions that do not fall within the standardized conditions of deemed savings, WhC can be obtained from specific operations. As their amounts of energy savings are not fixed and are specific to each project, they are subject to a particular examination by the EEOS' Verification Body (i.e. PNCEE – National Pole of the White Certificates scheme, unit of the Energy Transition Ministry).

Ex-post measurement is required in the application to back up the forecasted energy consumption:

- to corroborate the level of energy performance (through the analysis of unit energy consumption or any other relevant energy performance indicator and allowing to free itself from influencing factors)
- to identify certain parameters impacting energy consumption.

However, **they will not be used directly in the calculation of energy savings and then White Certificates**. The measurements are used as a kind of benchmark, to compare with the calculation of the forecast consumption.

Any significant gaps between forecast consumption and measurement have to be explained and **the baseline and/or the savings should be reconsidered**. In certain cases, the PNCEE may decide to reduce the amount of WhC issued for the specific operation, based on the analysis of the measurements.

Technical aspects

The methodology to calculate the energy savings for specific operations requires to **define three situations** (initial, baseline and forecasted).

The initial situation is the situation before the action is carried out. The energy consumption over at least 3 years must be detailed depending on usage, production and external factors such as: interruption of production, accidents, health crisis etc. The savings calculated should represent a decrease in energy consumption, all other things being equal.

There is no obligation to use specific measurement to establish the initial situation. It can be assessed using pre-existing measurements or energy invoices for example.

The baseline is a theoretical situation assumed to represent what would happen in the absence of the incentive provided by the WhC scheme. This analysis is a fundamental step since it serves as basis for calculating energy savings. The baseline usually corresponds to a higher energy efficiency than the initial situation, assuming that part of the energy efficiency improvements would have happened anyway (especially in case of regular replacement of equipment). This is to ensure that only the additional energy savings are credited as WhC. In some special cases, the baseline can be defined with a lower energy efficiency than the initial situation. For example, when the initial situation was a previous best available technology, with a higher efficiency than the current regulation (minimum energy performance standards) or market average. The baseline may then be defined according to the regulation or market average (or other reference), not to penalize front-runners that would implement further improvements.

The forecast situation defines the expected energy consumption after implementation of the energy efficiency action. It describes the energy performance expected by setting up the operation. The forecast situation is established based on engineering calculations (scaled savings).

Ex-post **measurement** (after the implementation of the action) is then required in case of action done in a site under the EU Emission Trading Scheme. In other cases, it is also strongly recommended, as PNCEE may ask about measured data when verifying the application file. It should be noted that the request about measured data may not necessarily be about energy consumption. It may be instead about another energy performance indicator.

The parameters measured, and the equipment used for measurement, the exact period (excluding start-up/stalling/shutdown), the measurement conditions (continuous or not, time step etc.) have to be described and justified as well as

explanations in case of gap between theoretical (scaled savings) and measured savings.

For actions in ETS sites, the measurement period shall at least be 6 months, except for actions claiming less than 20 GWh cumac¹.

The reporting about the measurement must be usable and in digital format (e.g. Excel file).

It should be noted that the measurement data are not used by the applicants in their calculation of energy savings claimed to get white certificates. The application is based on scaled savings (engineering calculations). The public authority, PNCEE, then decides whether the amount of white certificates issued is revised depending on the measurement data and explanations provided by the applicants.

Experiences

The white certificates scheme compares forecast consumption to a baseline and not to the initial consumption. Which is not easy to accept from an external point of view. Ex-post measurement is used as part of the **validation process**, to **ensure reliability** of the savings calculation submitted by the applicants.

Gaps between measurement and theoretical calculation, can lead to redefining the baseline of the savings calculation. It then can lead to revise the amount of white certificates issued (either with more or less certificates, depending on the analysis).

The exact tolerance in the gaps between measurement and theoretical calculation has purposely not been set by the ministry. Each specific operation indeed represents a different case, where the sources of uncertainties are different. It is therefore up to the applicants to justify that the difference between the measurement and the calculation is acceptable. This makes that project applicants cannot know beforehand what uncertainty margin is acceptable or not, which they can see as a barrier or risk to engage in the process.

The most important restraint from using specific operations comes from the uncertainty of the grant amount. The application can only be filed once measurement has been done. **This implies a significant time period between the investment and the white certificates issuance** (minimum 6 months, and usually 1 year).

¹ The unit of white certificates is kWh cumac, where "cumac" stands for lifetime-cumulated and discounted. Energy savings are indeed credited for the assumed lifetime of the action ("lifetime-cumulated"), applying a discount rate of 4% to take into account that all white certificates are issued at once, when approving the application file (and also taking into account that actual energy savings may decrease over time). 1 GWh cumac = 1 million of kWh cumac.

Further readings

Presentation of the option of specific operations on the Energy Transition Ministry website (in French): <https://www.ecologie.gouv.fr/operations-specifiques-deconomies-denergie>

Guidelines developed by ADEME about the methodology to assess specific operations (in French):

- For buildings and industry: <https://librairie.ademe.fr/changement-climatique-et-energie/5115-guide-technique-pour-le-montage-d-un-dossier-cee-dans-le-cadre-d-une-operation-specifique.html>
- For transport: <https://librairie.ademe.fr/changement-climatique-et-energie/6055-guide-technique-pour-le-montage-d-un-dossier-cee-dans-le-cadre-d-une-operation-specifique-transport.html>

Presentation by Marie Pausader (Ministry of Ecological Transition) at the Concerted Action EED (October 2015) about the [Methods for the calculation of energy savings](#). Note: some points may have changed since 2015, but the general approach remains the same.