



Measuring energy savings in industry: the experience of the Italian white certificates scheme

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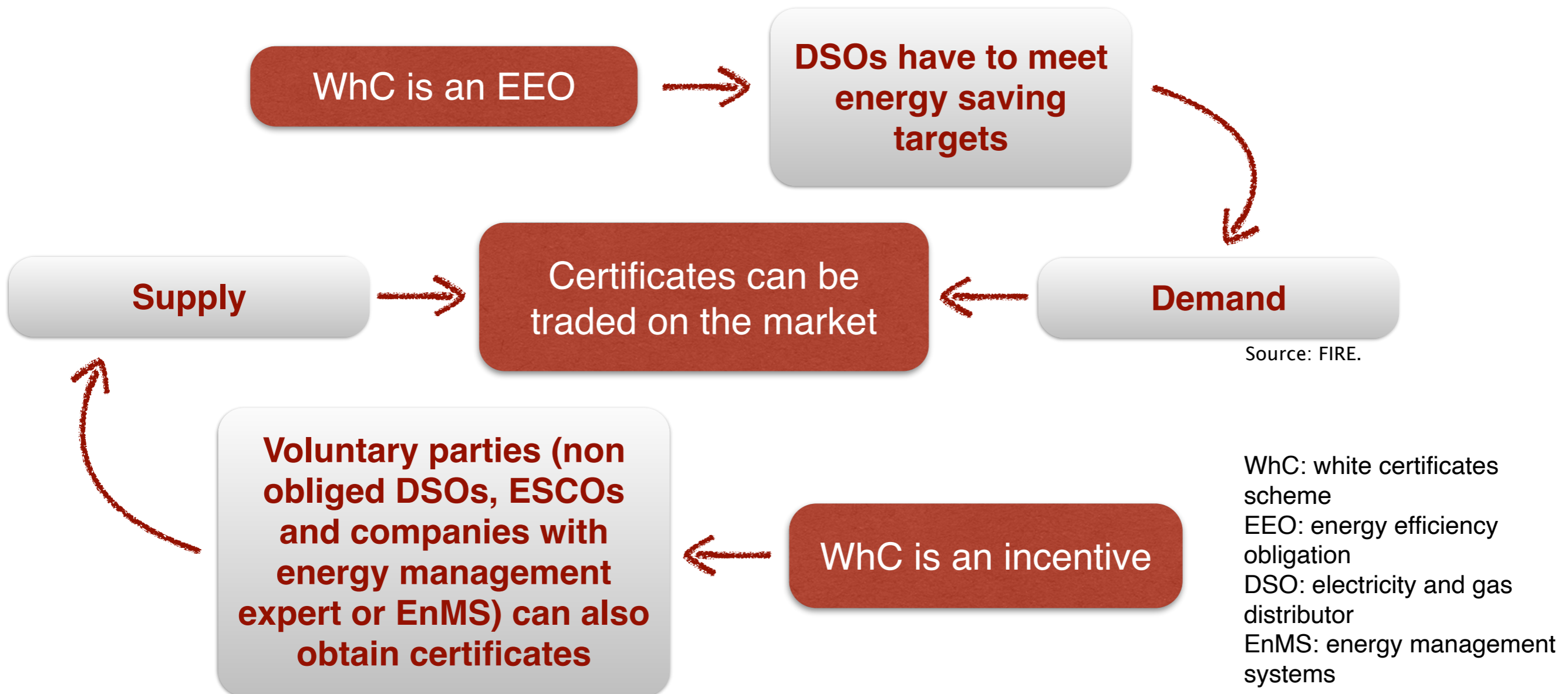
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The scheme basics: EEO + certificates trade



White certificates are obtained for a period of time that varies from 3 to 10 years according to the complexity of the implemented energy efficiency action. All sectors are virtually eligible. 1 WhC = 1 primary energy toe saved.

Evaluation of energy savings and M&V



Deemed savings projects

The method is easy to use and facilitates the evaluation.

Savings are just estimated. Need for policy makers to evaluate effective savings ex-post, which can be complex.

Certificates are generated soon after the implementation of the action.

Required documentation: choice to go easy or bureaucratic. In the first case possible risk of large frauds over time.

Importance to check proponents and not only projects to avoid frauds.

On field controls are expensive.

Possibility to pre-evaluate energy efficiency products in order to simplify evaluation.

Monitoring plan projects

The method is usually complex.

Savings are measured (approach in line with IPMVP option B).

Certificates required time to be generated (ex-post metering).

Required documentation: is usually substantial, but the size of the project allows it.

Effort required to present the project both for the proponents and the evaluators. Shall project data be available for everybody?

On field controls are usually a viable option.

Very flexible approach, but requires discussion, information, and training.

Both approaches have pros and cons and the best option is probably to use them both.

What is included in a project application



Project description, including ex-ante situation and expected modifications.

Definition of M&V programme (metered variables, installed meters, algorithm, adjustments, etc.).

Ex-ante energy consumption and adjustment variables values or evaluation of reference baseline for new installations.

Information and documentation on the start-up date of the project.

Other information (e.g. information on the proponent, periodic verification of meters, other incentive used, etc.).

After the proposal is accepted, year by year request for certification are presented with data on ex-post measurements.

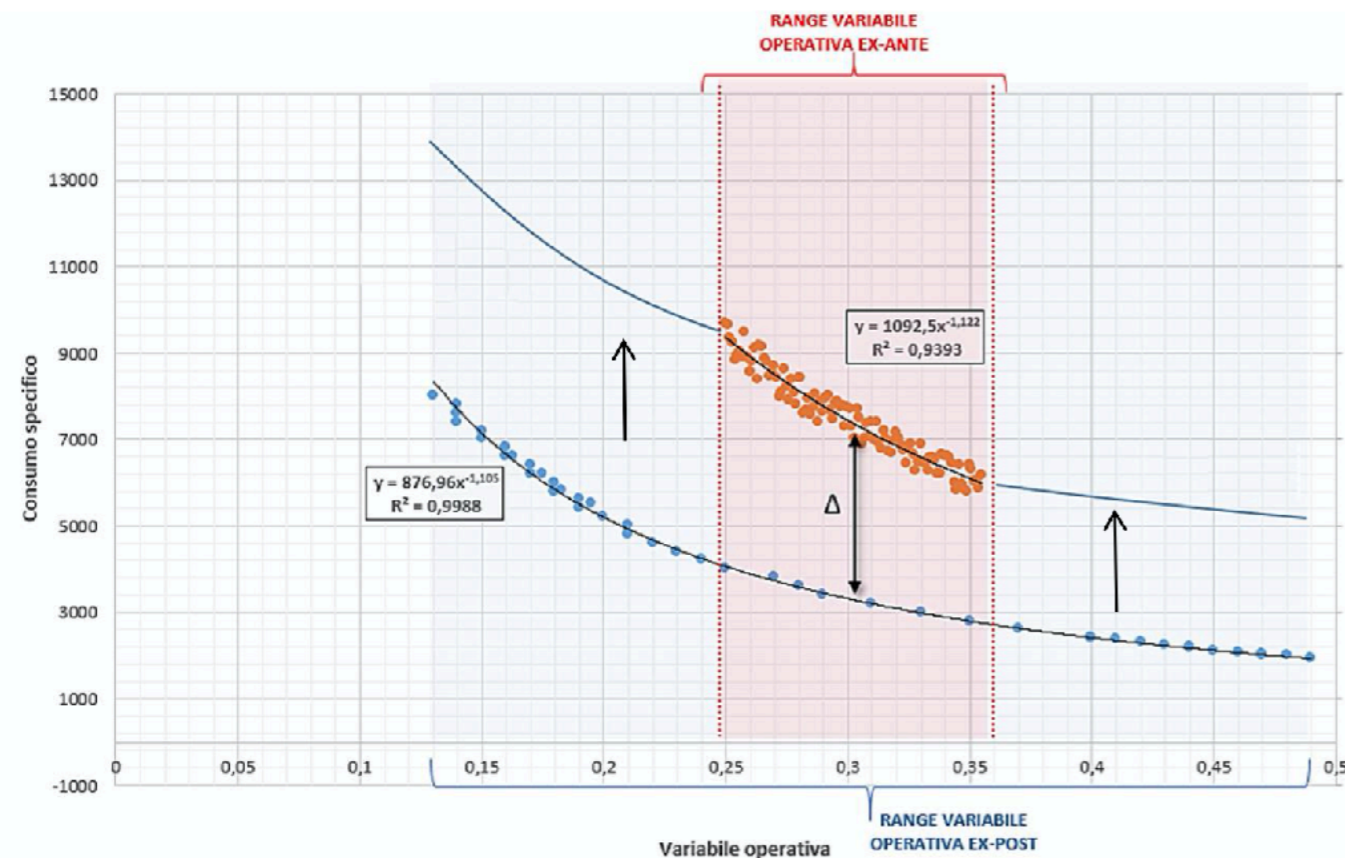
M&V baseline adjustments and statistics



In the Italian WhC the evaluation of ex-ante energy consumption shall be based on a year of measures, implemented with hourly meters.

This represents one of the main challenges for proponents, especially when the required meters are not available when the project starts to be discussed.

A guide is dedicated to the methodologies eligible to evaluate the ex-ante energy consumption when data are available for periods of time below one year.



There are also sectoral guidelines that describe the main energy efficiency measures eligible in each sector (both process related and cross-sectoral) and the consumption baselines that can be considered as references.

Lessons learnt from M&V in WhC 1/2



- M&V based on IPMVP option B or similar approaches is complicated, but feasible with the size of projects typical of the industrial sector.
- High quality M&V improves projects quality, qualifies operators, and provides a lot of valuable data to managing authorities.
- Metered savings stimulates proponents to achieve high performance, since the incentive is based on the real results.

Lessons learnt from M&V in WhC 2/2



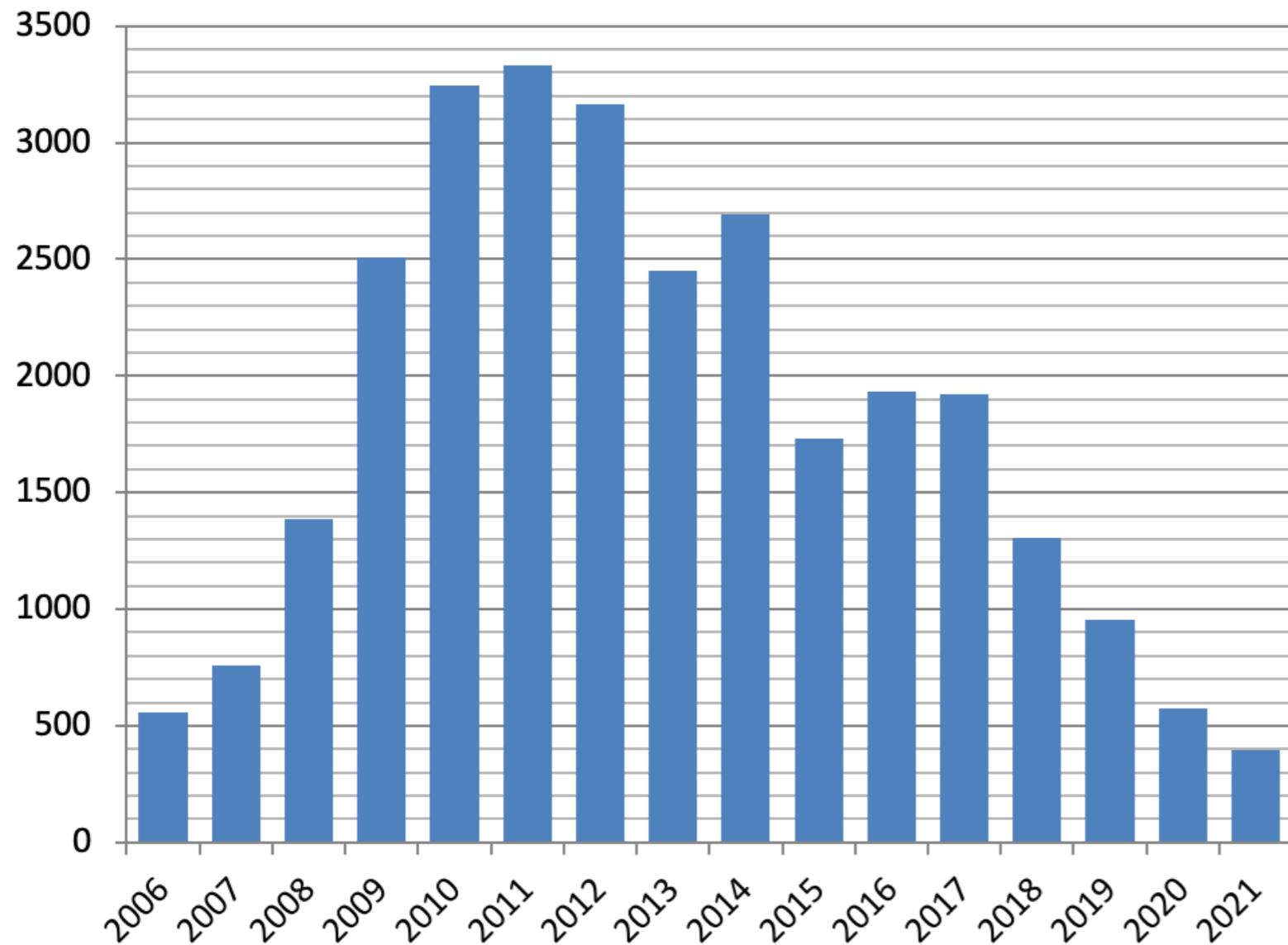
- High quality M&V needs support in terms of information, training and continuous communication with market operators.
- Flexibility should be granted in terms of meters' requirements and ex-ante baselines evaluation.
- Finding out the right mix between easy of use and strictness is important to avoid disaffection and to maintain cost-effectiveness.

What happened in terms of savings



Energy savings accounted for annually (ktoe)

(FIRE on GSE data)



The reasons behind the reduction of accounted savings:

- ▶ from 2013 only projects yet to be built can be presented;
- ▶ from 2015 short pay-back time projects exclusion;
- ▶ 2017-2018 large frauds discovered;
- ▶ from 2017 only metered projects with stricter rules on M&V.

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