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Package of measures for the dissemination of energy efficient equipment: case of solar water heaters

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Enerdata

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A D E M E



Content

1. Key issues

2. Typical measures and instruments

- ✓ Economic instruments
- ✓ Norms and certification
- ✓ Regulation

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Dissemination of efficient equipment: key issues

- **Main barriers to the development of efficient equipment:**
 - ✓ High initial costs, long payback time, uncertain economic profitability
 - ✓ Limited quality, low reliability, lack of skilled installers
 - ✓ Limited information to consumers resulting in a lack of interest and awareness.
- **Main measures to stimulate dissemination**
 - ✓ Economic and financial incentives to overcome high initial costs
 - ✓ Quality management to increase customers confidence in solar systems and installers (standards and labels)
 - ✓ Information or awareness programs to stimulate demand
 - ✓ Regulation that impose the use of efficient equipment.

Economic instruments

- **Type of incentives :**
 - ✓ Subsidies or rebates,
 - ✓ Tax reductions (on income tax, on VAT, on custom duty),
 - ✓ Low / zero interest loans
 - ✓ Third party financing
- **Objective :**
 - ✓ Improve competitiveness (shorten payback time)
 - ✓ Reduce or remove initial capital expenditure
- **Impacts :**
 - ✓ Highly effective if attractive and known to consumers
- **Drawbacks :**
 - ✓ Cost in public funds
 - ✓ Possible negative impact if subsidies are withdrawn too rapidly
 - ✓ Costs increase in anticipation or after introduction of measure

Norms and certification

- **Type of incentives :**
 - ✓ Equipment and/or installers must conform to a given set of technical specifications and/or be certified.
 - ✓ Norms are mandatory and certification is generally voluntary
- **Objective :**
 - ✓ Limit penetration of poor quality products
 - ✓ Stimulate quality improvement (equipment / installation)
 - ✓ Improve customers confidence
- **Example :**
 - ✓ Keymark certification scheme for solar in the EU
- **Drawbacks / risks:**
 - ✓ Testing and certification centres must be set
 - ✓ May increase the equipment price (removing of low quality products)



Regulation

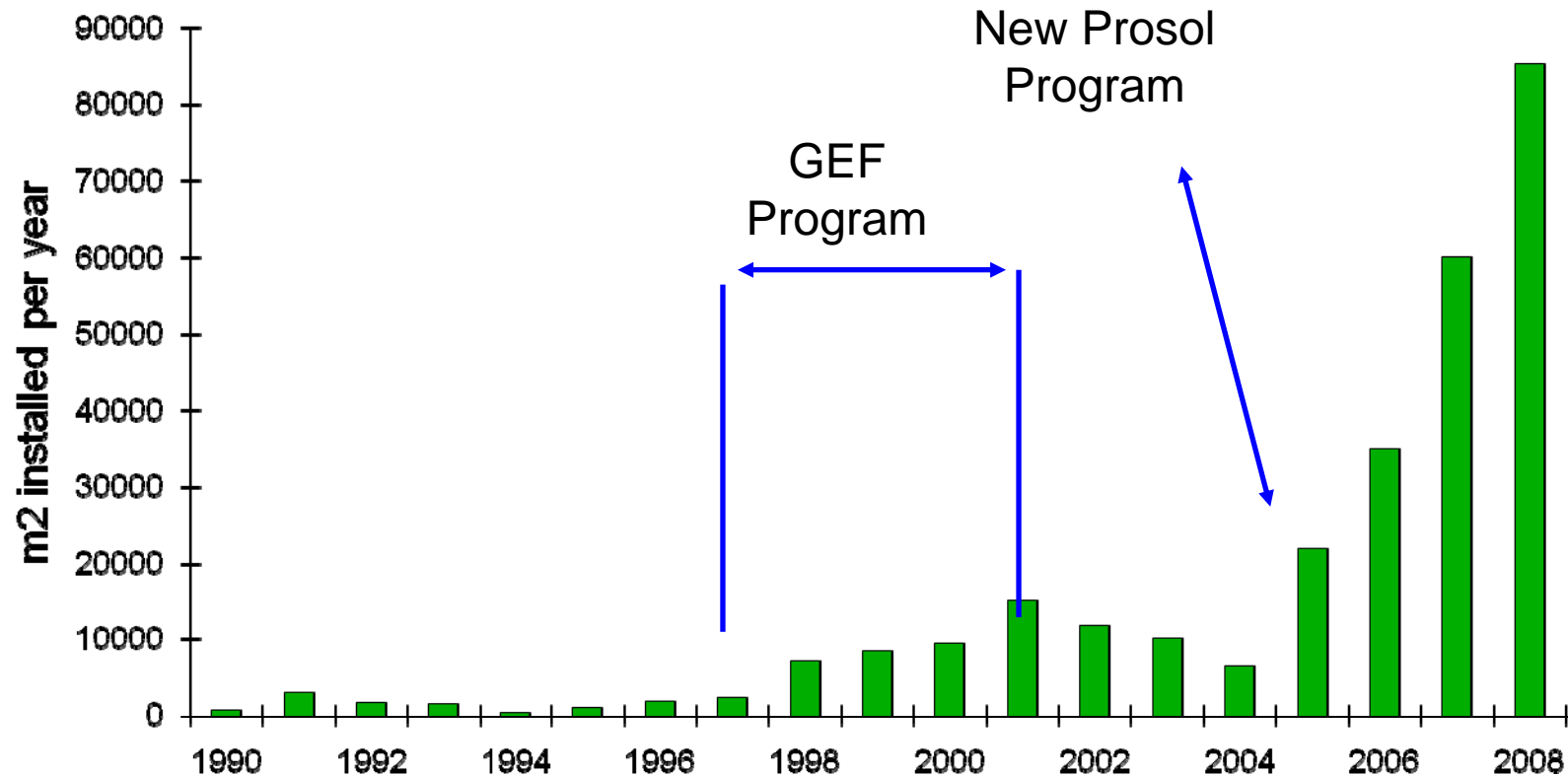
- **Type of incentives :**
 - ✓ Regulation making mandatory the use of efficient equipment (e.g. solar heaters or efficient lamps)
- **Objective :**
 - ✓ Expand dissemination where non-economic barriers (lack of information or confidence in new technologies) prevent adoption of efficient equipment
- **Example :**
 - ✓ Mandatory installation of solar water heaters in Spain (Barcelona Ordinance, new building regulation in Spain)
- **Drawbacks / risks:**
 - ✓ Need agreement among actors in the construction sector
 - ✓ Possible bottleneck in equipment supply
 - ✓ Pressures to decrease costs leading to lower quality

Packages of measures (1): Economic incentives + financing scheme

- **Issue :**
 - ✓ Even with subsidies, tax credits or rebates, purchase of efficient equipment may be out of reach for most households
 - ✓ Financing schemes are necessary to provide the initial investment
- **Complementary measures :**
 - ✓ Subsidies (direct or tax reduction) +
 - ✓ ... low interest financing
 - ✓ ... third part financing
- **Example :**
 - ✓ Investment by electric utility and loans repayments through electricity bills for solar water heaters in Tunisia

Example of financial and economic incentives packages : solar in Tunisia

- Direct financial incentives + no custom duties + no VAT on solar water heaters with the GEF program has stimulated the market from 1997 to 2001
- Drop of the market with discontinuation of subsidies after 2001
- Rapid development with new Prosol programme

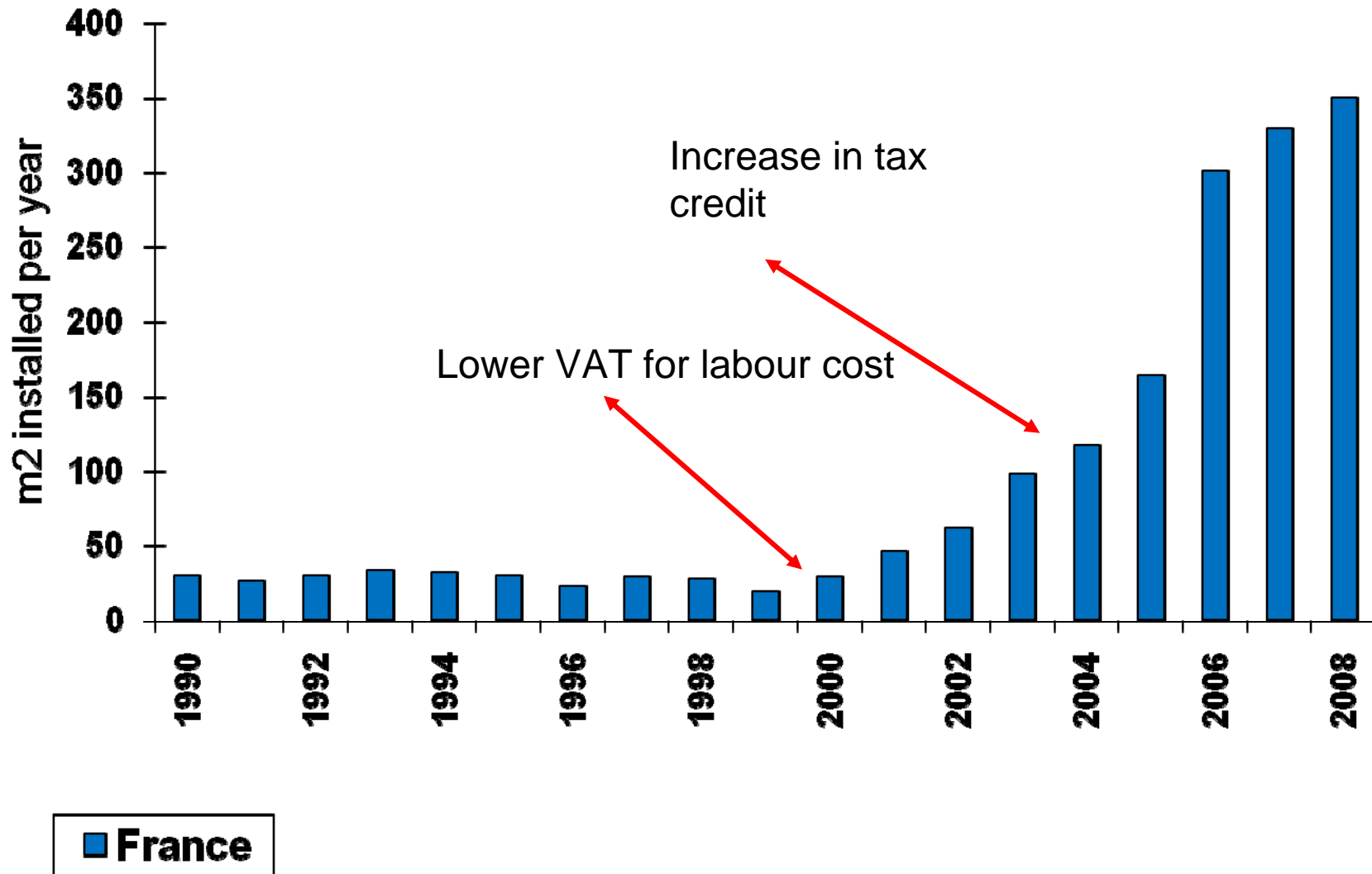


Source: Enerdata
from ANME

Package of measures (2): Financial incentives + quality labels

- **Issue :**
 - ✓ Economic incentives stimulates dissemination but do not guarantee quality improvement.
- **Complementary measures :**
 - ✓ Link financial economic with quality requirements: i.e. subsidy only for equipment meeting technical norms and certified installers
- **Example :**
 - ✓ In France tax credit for solar heaters only applicable for equipment that are awarded Solar Keymark certification

Impact of package of measures on solar water heaters : France

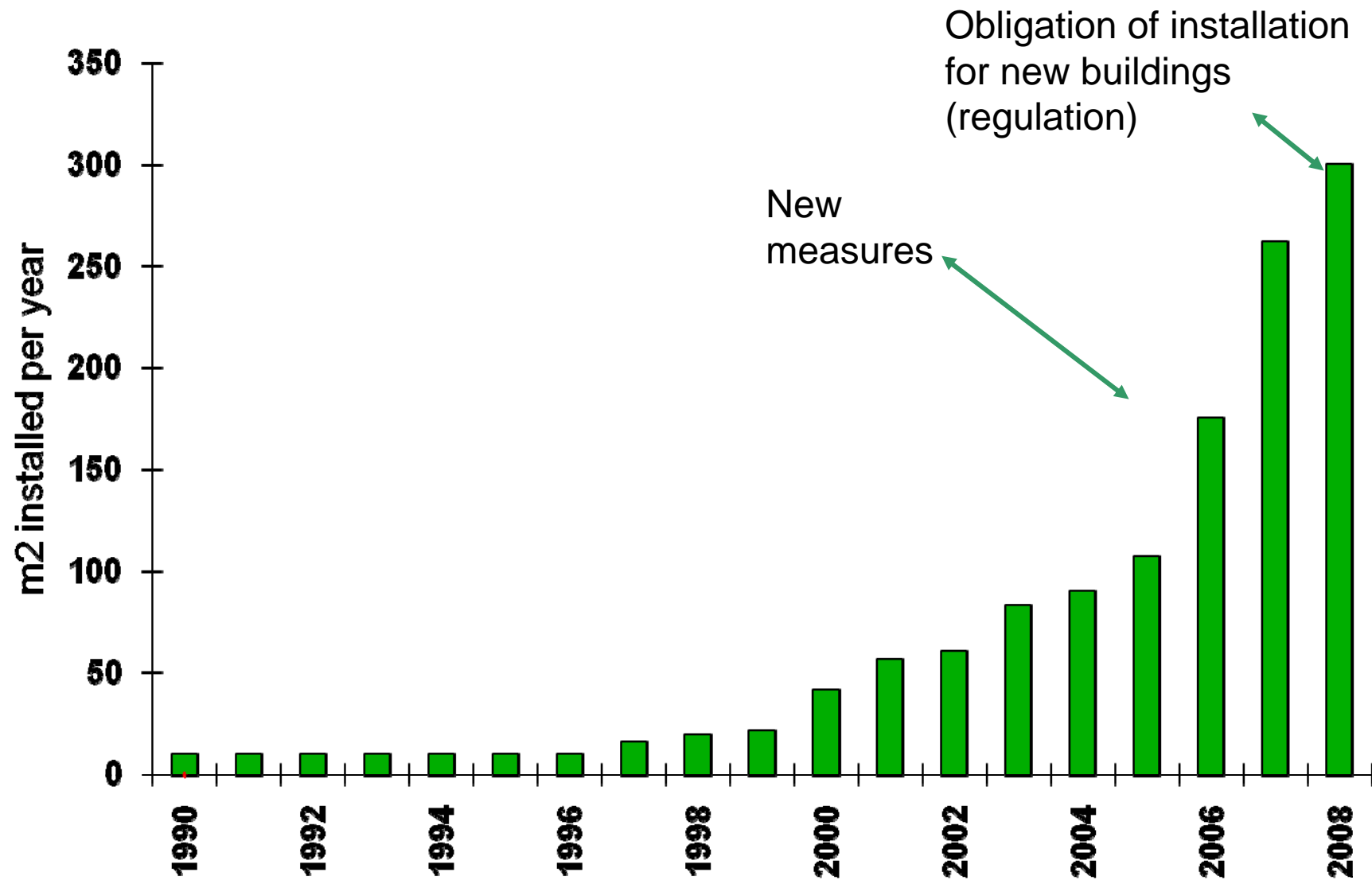


Source: Enerdata from ObservER data

Package of measures (3): Regulation + financial incentives + certification

- **Issue :**
 - ✓ Regulation may induce extra construction costs
 - ✓ ... or (if construction price is capped) lead to lower quality installations and loss in consumer confidence
- **Complementary measures :**
 - ✓ Financial incentives to lower extra cost and specific financing schemes
 - ✓ Certification and technical norms to induce quality improvement
- **Example : Spain**

Impact of package of measures on solar water heaters: Spain



Source: Enerdata from ObservER data

Package of measures (4): Regulation + energy tax + financial incentives

- **Issue :**
 - ✓ Regulation and tax impose actions by consumers but tax increase costs
 - ✓ ... or (if construction price is capped) lead to lower quality installations and loss in consumer confidence
- **Complementary/alternative measures :**
 - ✓ Regulation imposing audits and/or energy efficiency action plans for large consumers
 - ✓ Financial incentives to lower investments cost
 - ✓ Tax on energy (e.g. carbon tax) only paid if no action by consumers
- **Example : UK, Denmark, Norway, Thailand**

Conclusions

- Economic incentives (e.g. subsidies, tax reduction) are much more effective if included in a package of measures, for instance with financing mechanisms (low or zero interest loans, third party).
- Regulatory measures can enlarge dissemination but the effect is better if they are complemented with economic incentives.
- Training of installers and certification of equipment and installers should be part of all packages to guarantee the success of the dissemination of efficient equipment and avoid negative feedbacks.
- Information and awareness campaigns of the general public are also a very important component of any package of measures.
- There is no miracle measure but the best results are obtained with a package of complementary or even alternative measures.