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Impacts of energy efficiency programs operated by Swiss utilities and implications for other countries

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In cooperation with the CTI



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Energy efficiency programs and utilities

- Impacts of energy efficiency programs:
 - Reduced energy demand and improved security of supply
 - Social, environmental and economic benefits
- Program administrators:
 - Public agencies
 - Energy efficiency companies
 - Utilities
- Implementation by utilities:
 - Voluntary basis
 - Obligations
- Utilities have crucial role in maximizing positive impacts of energy efficiency programs.

Case study: éco21

- Operation area: canton of Geneva, Switzerland
- Administrator: local utility *Services Industriels de Genève (SIG)*
- Focus: electricity and fossil fuel savings
- Sectors: households, SME, big consumers
- EE measures: lighting; domestic appliances; cooling, ventilation, heating equipment; optimization; energy management; training



Methodology

- Macroeconomic model for Switzerland:
 - Impacts of Swiss energy efficiency programs on GDP and employment
 - Input-output method
 - Goods and services -> Manufacture stages -> Extraction of raw materials
- Cost-effectiveness from multiple stakeholder perspective:
 - Program participants & Ratepayers
 - Program administrators & Utilities
 - Geographic jurisdiction territory & Society

Main results: electricity-saving programs

- **Benefits** for program **participants** are **twice as high** as their costs.
- It is **25% less expensive to save energy** than to consume.
- **53 million CHF** spent by **éco21** ->
 - **157 million CHF** of **gross GDP** (+21% vs. “no program” scenario)
 - **1000 jobs** in full-time equivalent **gross** (+25% “no program” scenario)
- **Long-term** positive macroeconomic **impacts**.
- Among the trade-offs are potential **increase in energy tariffs** and **higher costs for utilities**.
- Impacts **depend** on **cost-effectiveness** of energy efficiency programs and **structure** of the energy sector.

Tools for program administrators

- Increased **program scale**
- Focus on **education and training**
- Priority to development of **long-term relationships** with program participants and contractors

- Expected outcomes:
 - Lower **program administration** costs
 - Negotiated **price discounts** on equipment and installation services
 - Maximized coverage of **energy saving potentials**
 - Improved **quality of energy services**
 - Positive **spillover effects**

Why utilities should take an active role?

- Utilities have **direct contact** with **consumers**.
- Utilities have the **knowledge** and the **power to shape** the **energy system** structure.
- Expected outcomes:
 - **Targeted** energy saving **efforts**
 - **Avoided** additional **costs** for utilities (e.g., avoided grid reinforcement)
 - Reduced **energy tariffs**
 - Lower costs of **renewables** integration and **smart grids** development
 - Improved **security of supply**



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Thank you for your attention!

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