

Promoting energy efficiency through competitive tenders. Comparing auction schemes and end-user activation in Germany, Portugal, Switzerland and Taiwan

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OVERVIEW

1. Introduction and theory
2. Cases
3. Comparison and conclusions

WHY COMPETITIVE TENDERS / AUCTION?

Rationale for governments:

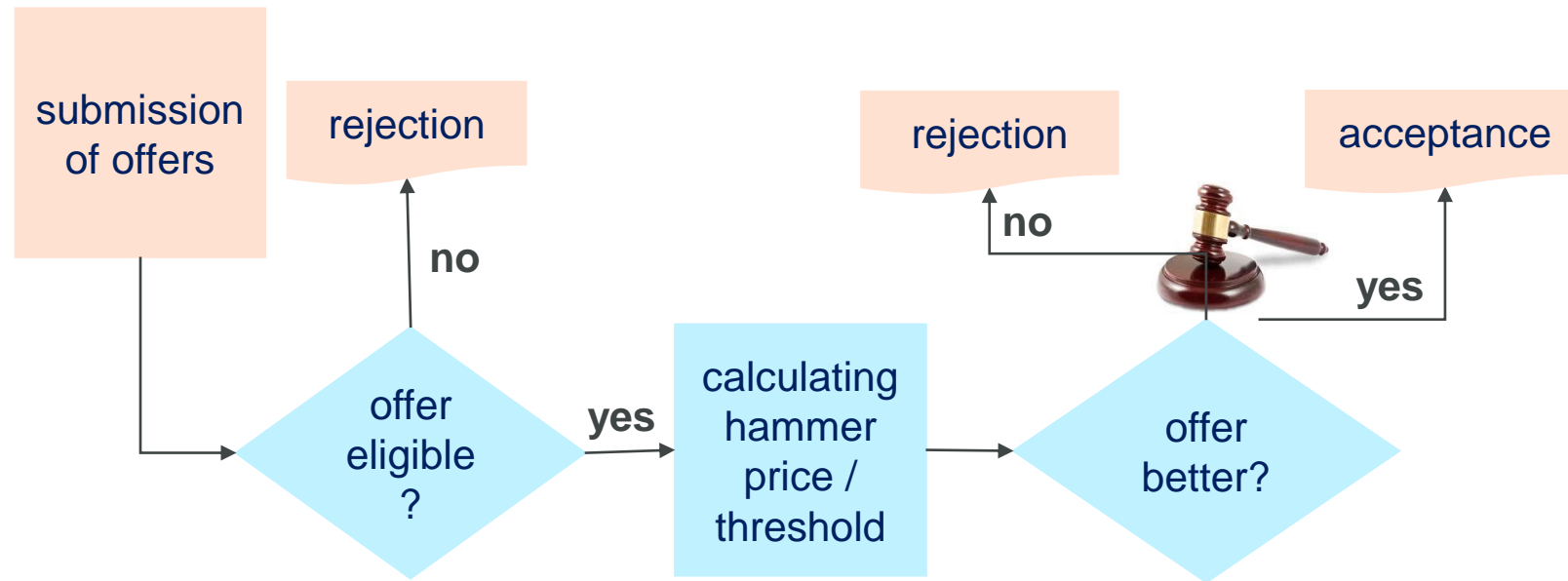
- Uncertainty about the market situation
- Steering public funds towards the best projects
- Lowering costs of subsidies



Competitive tenders / auctions are a market oriented scheme for price setting. As such they are better than subsidies on a first-come-first-serve base.

HOW DOES ONE AUCTION WORK?

business enterprises applying for funds



public administration granting funds

BIDDING AND AUCTIONS?

Bidding and auctions – common for renewables (wind, photovoltaics)...



...But bidding and auctions for energy efficiency?

How to engage different end-user groups?

How to support not only big players but also SME and households?

How to implement the scheme in detail?

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GERMANY (1/2)

name, since	Pilot Program Step up, 2016 to 2019 Federal Competition Efficiency in Business-Funding Competition since April 2019
auctioned good	In the Pilot Program until 2019: kWh electricity savings In the Funding Competition since 2019: CO ₂ emission reduction
properties of good	<ul style="list-style-type: none"> • criteria: <u>subsidies per kWh electricity savings (old)</u>; <u>subsidies per Tonne of CO₂ saved by an energy saving measure (new)</u> • discriminatory price, multiple units
scope of sellers	<ul style="list-style-type: none"> • mainly private sector companies as owners of electrical installations (motor systems, lighting, process technologies, etc.) but open to all actors, sectors and technologies • contracting companies as intermediaries
price dev. and range	<ul style="list-style-type: none"> • first-price, sealed-bid; not reserved • amortisation time for the measure before funding above 4 years • maximum funding rate 50% of efficiency related costs; maximum funding per project 5 Mio €
Budget	Euro 7 million/every two month. Funding concept designed to be general and not selective so that grants from the funding programme are therefore not classified as state aid by the European Commission.

GERMANY (2/2)

participation: overall	about 152 applications in the 6 rounds of the pilot phase (2016-2019), of which 89 had been accepted for funding.	
...by size of company	45% 1-249 employees	49% Industry
...by sector	12% 250-499 employees	36% Tertiary
	14% 500-749 employees	15% Energy
	29% 750 and more employees	
experiences	<ul style="list-style-type: none"> • large private and public enterprises are over-represented • some participants hesitate to participate because of risk to drop out • first timers find the system difficult to understand • higher participation in regions with higher density of industry 	
measures taken to address participation	<ul style="list-style-type: none"> • marketing activities • simplification of conditions • notification of the program to the European Commission to enable higher funding shares 	
challenges remaining	<ul style="list-style-type: none"> • demand mainly from larger companies • people tend to go for the funding opportunities without tendering element 	

PORTUGAL (1/2)

name, since	PPEC, since 2007
auctioned good	kWh electricity savings; others (see below)
properties of good	<ul style="list-style-type: none">• criteria: subsidies per electricity savings; environmental benefits; the relative importance of different cost elements in total cost of the measure; qualitative evaluation of soft measures by experts• discriminatory price
scope of sellers	<ul style="list-style-type: none">• electric utilities, consumer organizations, business associations, energy agencies, municipal agencies, higher education and R&D institutions.
price dev. and range	<ul style="list-style-type: none">• single shot; sealed; not reserved
Budget	Euro 23 million every 2 years

PORTUGAL (2/2)

participation: overall	about 306 measures in ten years (6 editions)
...by end-user groups	40% all sectors (soft measures) 19% industry and agriculture 28% commerce and services 13% households
experiences	<ul style="list-style-type: none">• participation of non electric utilites has been increasing• electric utilities are usually very successful
measures taken to adress participation	<ul style="list-style-type: none">• tender for all sellers and a tender only for sellers that are not electric utilities• different tenders for hard and soft measures• biannual tender
challenges remaining	<ul style="list-style-type: none">• the PPED edition of 2017-2018 was the last one, so far• address different kind of measures• new regulation will include gas measures

SWITZERLAND (1/2)

name, since	ProKilowatt, since 2010
auctioned good	kWh electricity savings
properties of good	<ul style="list-style-type: none">• criteria: <u>subsidies per kWh electricity savings</u>• discriminatory price, multiple units
scope of sellers	<ul style="list-style-type: none">• mainly private sector companies as owners of electrical installations (motor systems, lighting, etc)• intermediaries who bundle measures of SME and households
price dev. and range	<ul style="list-style-type: none">• reserved with maximal price published• first-price, sealed-bid
Budget	Euro 35-45 million/year



SWITZERLAND (2/2)

participation: overall	about 600 projects and programmes in ten years
...by end-user groups	40% services and trades 25% industry 18% public sector 17% households
experiences	<ul style="list-style-type: none">• large private and public enterprises are over-represented• some participants hesitate to participate because of risk to drop out• first timers find the system difficult to understand; second timers appreciate the element of competition
measures taken to adress participation	<ul style="list-style-type: none">• separate tender for household appliances• different measures for simplifying and speeding up application• different measures for communication
challenges remaining	<ul style="list-style-type: none">• demand stagnating• activating measures in SME

TAIWAN (1/2)

name, since	Energy Management System Tendering Program, since 2019
auctioned good	kWh electricity savings
properties of good	<ul style="list-style-type: none">• criteria: <u>subsidies per kWh electricity savings</u>• discriminatory price, multiple units
scope of sellers	<ul style="list-style-type: none">• All of the following sub-sectors<ul style="list-style-type: none">- manufacture – textile, clothing, basic metal, plastics product, fabricated metal, fertilizers plastic and rubber man-made fiber, other non metallic mineral, other chemical products- service - wholesale and retail, transportation and storage, accommodation and food service, education, human health and social work, arts entertainment and recreation
price dev. and range	<ul style="list-style-type: none">• reserved with maximal price published• first price, sealed-bid• buyout-option at 7 cts/kWh (2.4 NTD, average price of electricity to industry in 2017)
Budget	Euro 3 million/year

TAIWAN (2/2)

participation: overall	14 measures approved in first year (2019)
...by end-user groups	70% manufacture sector 30% service sector
experiences	<ul style="list-style-type: none">• first year operation in 2019; second year stalled by Covid-19• all measures need to implement smart controls and real-time monitoring• only open to registered ESCO in order to promote their competencies in energy efficiency consulting
measures taken to adress participation	<ul style="list-style-type: none">• motor-driven devices upgrade• innovative energy saving technologies adoption• smart controls and real-time monitoring technology implementation• up to 49% of total project budget, with a maximum of Euro 0.3 million
challenges remaining	<ul style="list-style-type: none">• opening applications to other than registered ESCO?• SME normally apply to other subsidy program with higher subsidy amount (which are not accessible for larger corporations)

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COMPARISON (1/2)

auctioned good	mostly kWh electricity savings; but also CO ₂ (Germany) and further benefits (Portugal)
properties of good	<ul style="list-style-type: none">• criteria: mostly <u>subsidies per kWh electricity savings</u>; but also subsidies per CO₂ savings (Germany) and further criteria (Portugal)• all: multiple units, discriminatory price
scope of sellers	<ul style="list-style-type: none">• mainly private sector companies as owners of electrical installations (motor systems, lighting, etc)• intermediaries who bundle measures of SME and households (Switzerland, Portugal) and ESCO (Taiwan, Germany)
price dev. and range	<ul style="list-style-type: none">• no maximal price published in Germany and Portugal; maximal price published in Switzerland and Taiwan• no buyout-option except for Taiwan (subsidies of 7 cts/kWh electricity savings)• all: first-price, sealed-bid

COMPARISON (2/2)

participation: overall	between about 14 and 60 measures per year (average)
...by end-user groups	mostly industry and manufacturing (Germany, Taiwan), but also services and some notable involvement of households (Portugal)
experiences	<ul style="list-style-type: none"> • (first) participation with rather high entry costs for applicants • large private and public enterprises are over-represented • can be used for different target groups and purposes • can be repeated over time without noticing strategic bidding • can also be implemented during Covid-19 • can be extended to fuel savings and renewable heat (Germany)
measures taken to adress participation	<ul style="list-style-type: none"> • communication / marketing of tender scheme • simplification and speeding up of application • separate tenders for specific target groups (Germany in Pilot Phase only, Portugal, Switzerland) sometimes useful but risk of generating low number of offers
challenges remaining	<ul style="list-style-type: none"> • activating measures in SME? • coordinating tenders with other subsidies scheme • <u>Reducing the cost of the tendering process for bidders and the administration</u>

CONCLUSIONS

- Competitive tenders can be designed for a wide scope of different target groups, technologies and goods.
- Competitive tenders can deliver energy savings at low costs.
- Competitive tenders better suited for specifically designed technical solution rather than for standard measures. These will however require very detailed energy concepts upfront (high entry cost).
- Still reluctance by industry to bid for a subsidy for energy savings as it is adding significant uncertainty in the planning process (partially resolved by the shortening of the decision times for funding).
- Tendering can be repeated over time and remains competition-oriented.
- End-user participation: large enterprises tend to be over-represented.
- Specific precautionary measures must be taken if tenders should aim at SME and households.

THANKS!

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