

Lessons from international experiences with Onshore Wind tendering schemes

Katherina Grashof
Institut für ZukunftsEnergieSysteme (IZES)

VWEA and FEBEG seminar “Steunsystemen voor hernieuwbare energie op basis van tendering (focus wind)”, Brussels

23rd of June 2016

- Several studies on RES tendering schemes for onshore wind, PV and biomass across a number of countries in- and outside Europe
- Consultation of the German wind energy association BWE regarding the introduction of the German onshore wind tenders
- Consultation of the German solar energy association BSW regarding the introduction of tenders for ground-mounted PV
- Consultation of the German cooperative association DGRV regarding participation requirements for community energy projects in PV and onshore wind tenders

Study carried out for the German Bundesverband WindEnergie e. V., updated in cooperation with Austrian Wind Energy Association

Country RES schemes analysed – historical experiences

- Great Britain: Non Fossil Fuel Obligation (1990 – 1998)
- Ireland: Alternative Energy Requirement (1995 – 2003)

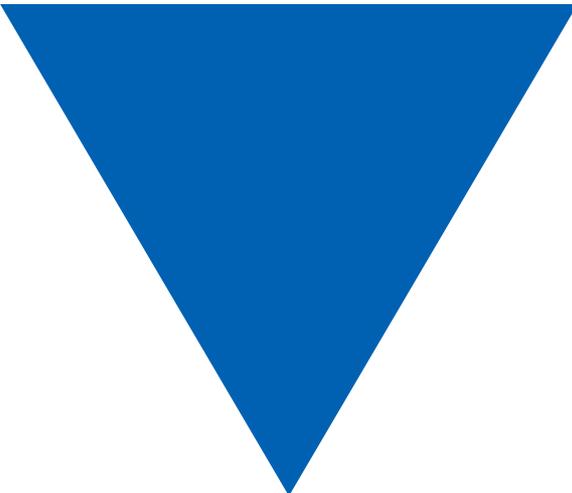
Country RES schemes analysed – recent experiences

- Brazil: Leilões de Energia (2009 – 2015)
- South Africa: Renewable Energy Independent Power Producer Procurement Program (2011 – 2014)
- Italy: Procedura competitiva d'Asta (2013 – 2015)
- The Netherlands: Stimulering Duurzame Energieproductie + (2011 – 2014)

Criteria: realisation, cost efficiency, actor diversity, investment certainty

Effectiveness:
Expansion of RES

Cost efficiency:
reduction of costs
per kWh



No market concentration /
high diversity of actors

Other goals sometimes pursued:

- Development of local industry (local content requirements)
- balanced regional distribution of new projects
- Inclusion of specific actors

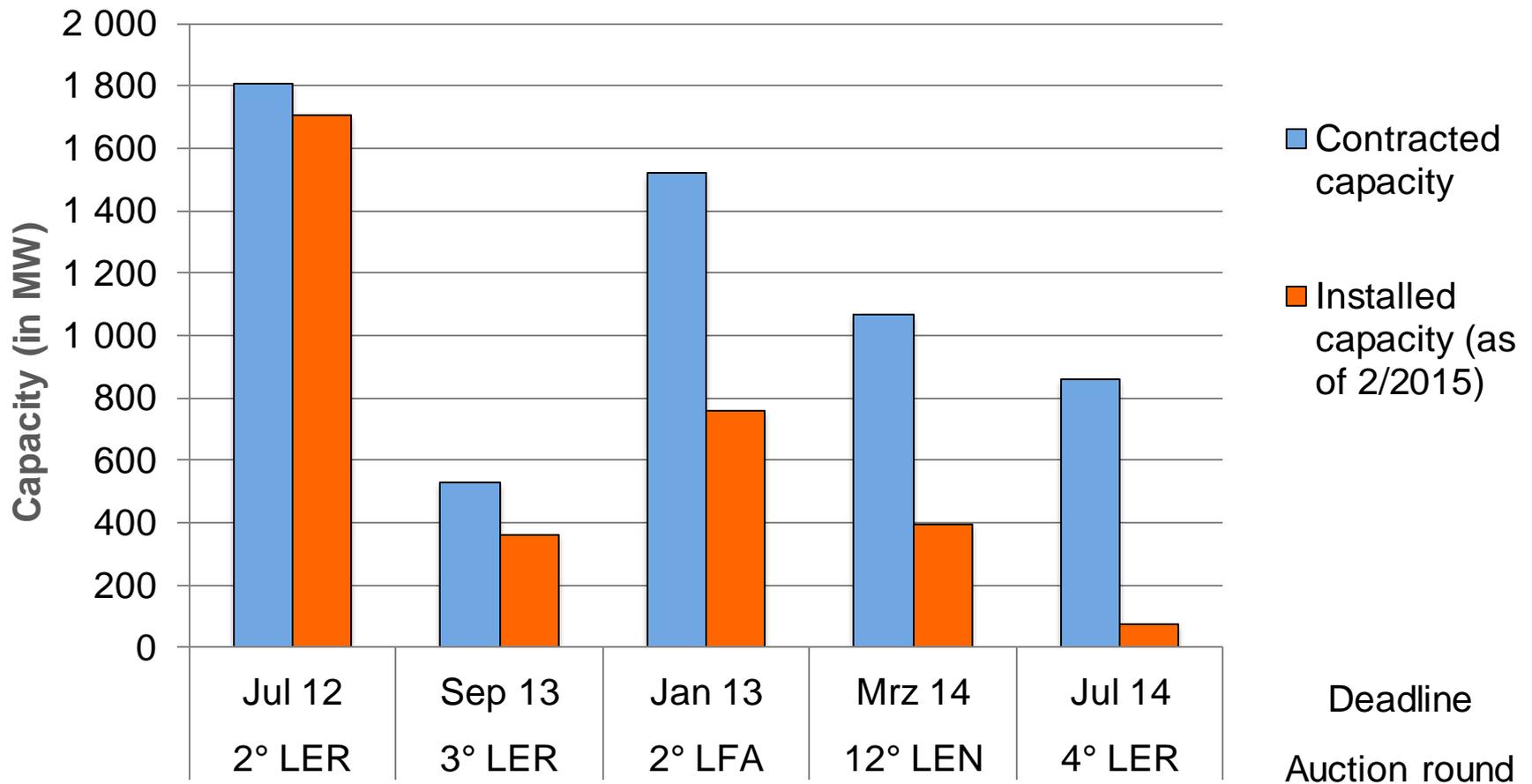
Great Britain (1990 – 1998) and Ireland (1995 – 2003)

- Low realisation rates:
 - Great Britain: 30 % of capacity contracted in auctions in operation by 2003
 - Ireland: < 20 % of contracted capacity in operation by 2005
- Significant underbidding
- Strong presence of large developers
- No obligation to deposit development securities
- Significant changes of auction design within short time-frames

Brazil (2009 – 2015), South Africa (2011 – 2014),
Italy (2013 – 2015) and The Netherlands (2011 – 2014)

Realisation rates

Realisation rate of projects with passed deadlines



Brazil (2009 – 2015), South Africa (2011 – 2014),
Italy (2013 – 2015) and The Netherlands (2011 – 2014)

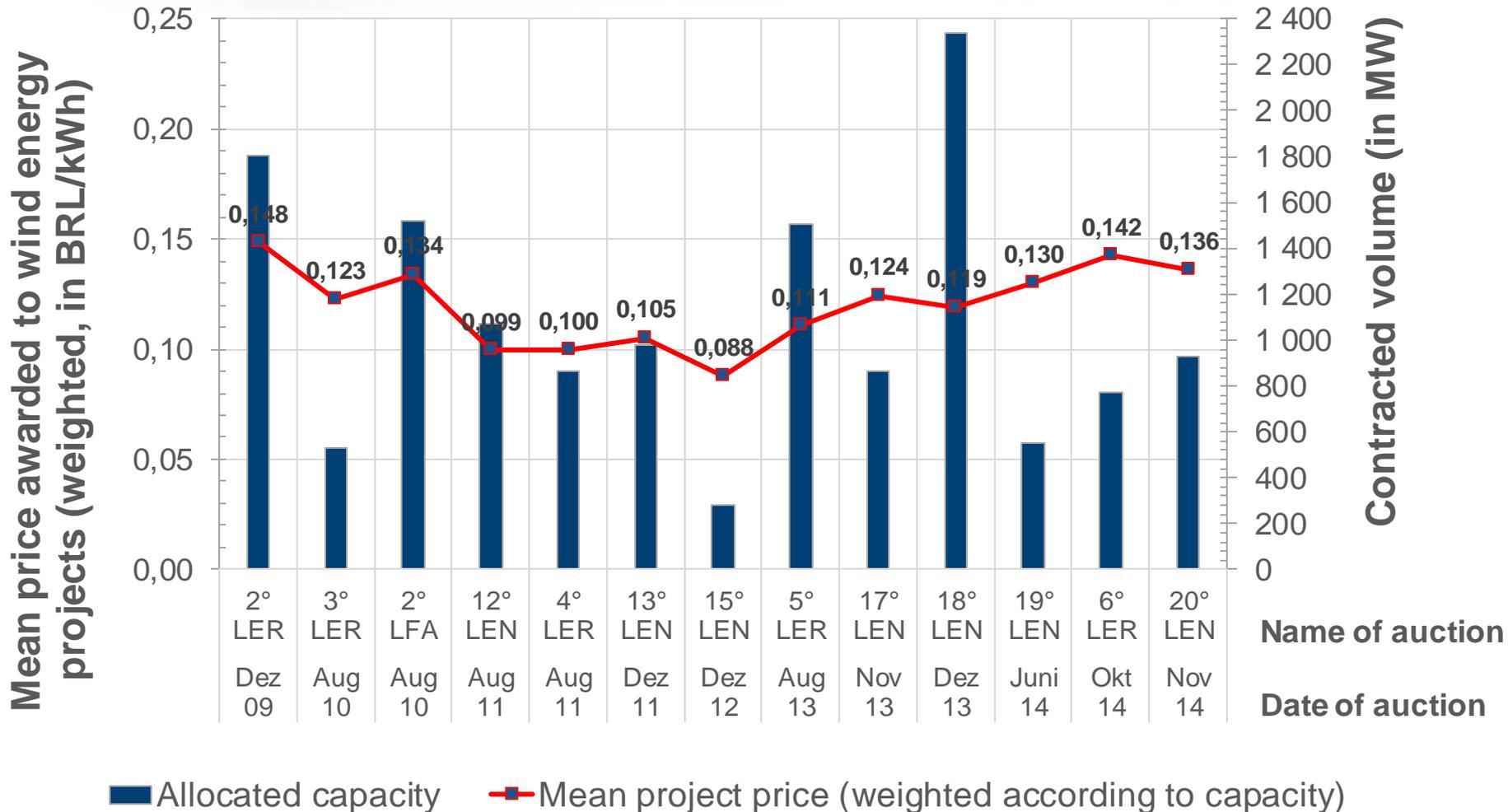
Realisation rates

- Brazil: descending from 95 % to 9 % as of 2/2015
- South Africa:
 - 1st round: 0 % at original deadline, 100 % after retroactively prolonged deadline
 - 2nd round: 60 % at end of deadline
- Italy, 1st round: < 50 % of contracted capacity at the end of deadline
- The Netherlands, 1st round: 90 % of contracted capacity as at 1/2016

Brazil (2009 – 2015), South Africa (2011 – 2014),
Italy (2013 – 2015)

Cost efficiency

Price results of Brazilian auctions



Brazil (2009 – 2015), South Africa (2011 – 2014),
Italy (2013 – 2015)

Cost efficiency

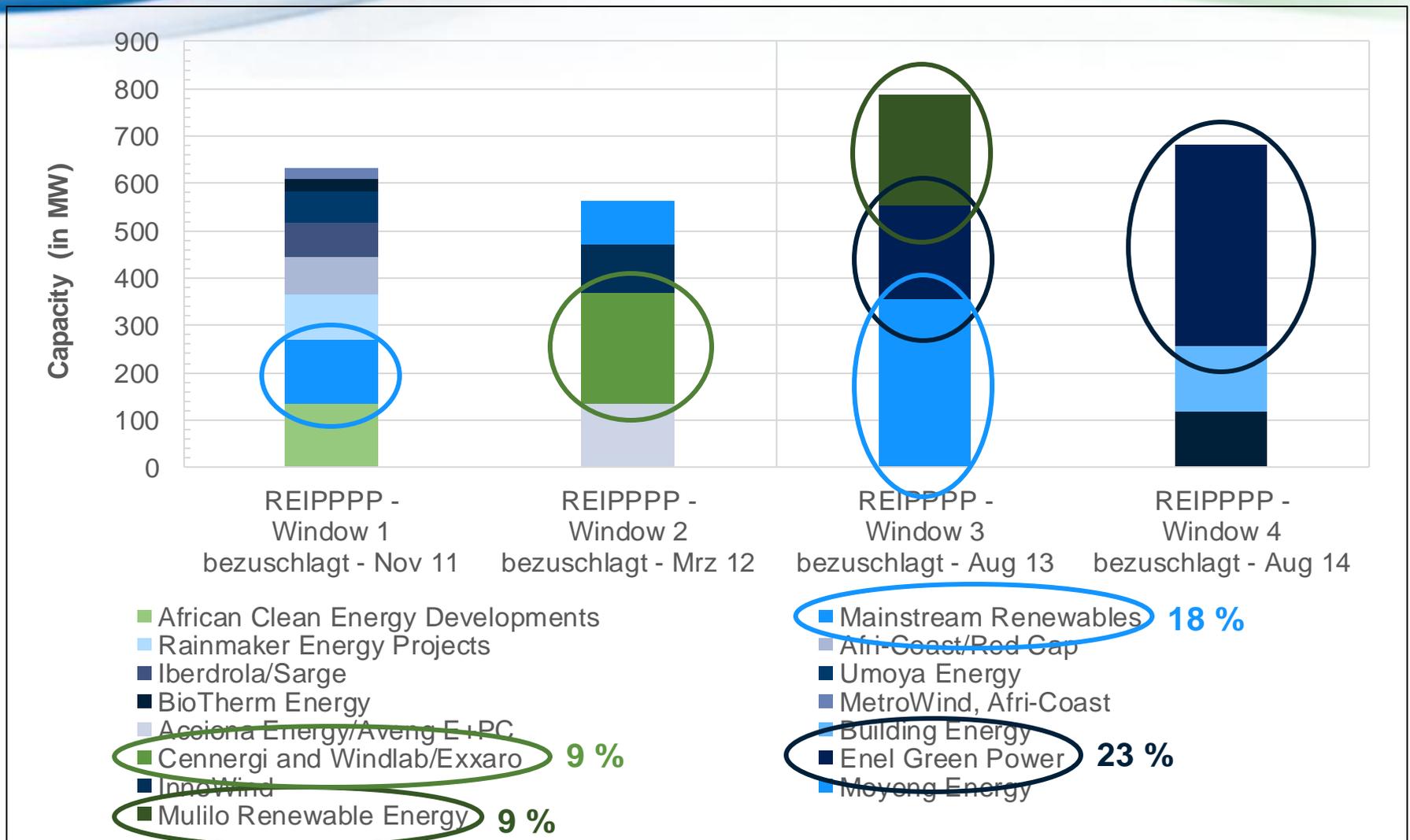
- Brazil: initial decrease, re-increase since 2013, possibly caused by tightened participation requirements
- South Africa: decrease over the four rounds, however, realisation rate unclear
- Italy: strong decrease in 3rd round, possibly due to unclear future rounds

Brazil (2009 – 2015), South Africa (2011 – 2014),
Italy (2013 – 2015)

Actor diversity

- Brazil: many subdivided projects, often large shares awarded to one bidder

Actor diversity in South African auction winners



Brazil (2009 – 2015), South Africa (2011 – 2014),
Italy (2013 – 2015)

Actor diversity

- Brazil: many subdivided projects, often large shares awarded to one bidder
- South Africa: large developers with international shareholders, signs of market concentration
- Italy: limited availability of data, but no sign of market concentration

Brazil (2009 – 2015), South Africa (2011 – 2014),
Italy (2013 – 2015)

Investment certainty

- Brazil: volatile capacities tendered out, one auction was postponed and later cancelled, grid access is challenging
- South Africa: unclear auction timetables, significant delays in signing PPAs
- Italy: legal disputes about winners of 1st round, only three rounds firmly planned

Effectiveness is still an issue, relevant parameters include:

- High alignment with grid connection capacities and processes
- Long-term clarity about tendering schedule and capacities, stimulates industry and avoids risky bids in last-minute „panic“
- Increase of tendered capacity by buffer for non-compliance
- Sophisticated monitoring to re-auction capacity of endangered projects
- High participation requirements and penalties for non-compliance (can deter small actors, however)
- Balance out realisation deadlines
 - Long enough to allow construction and grid connection
 - Short enough to enable realistically priced bids
- Avoid overambitious ceiling prices, to not encourage underbidding
- Tradeable auction awards can increase risk of non-compliance due to overoptimistic bidding

Cost efficiency is so far difficult to assess, relevant parameters include:

- Keep transaction costs low
 - In the public administration overseeing the scheme
 - For bidders: simple rules, transparency of criteria for the award of contracts
- Avoid market concentration (see below)
- Set reasonable ceiling prices, notably in case of low competition
- Low participation requirements, leading to less sunk costs of lost bids to be recovered over successful bids (tradeoff with high realisation rates)
- No compensation for meteorological less attractive areas (possible tradeoff with regionally distributed RES expansion)

Maintaining **actor diversity** is challenging, relevant parameters include:

- Entirely exempt small projects / projects from auctions
- Set aside capacity for auction among smaller projects / actors
- Special requirements to participate in regular auctions, e.g.
 - possibility to participate with less developed projects, reducing the amount of potential sunk costs
 - mechanism to recover sunk costs of lost bids
- Maximum share of capacity winners can contract

Investment certainty is key for the industry, relevant parameters include:

- Long-term clarity about
 - tendering schedule as regards dates of auction rounds and subsequent milestones (notification of winners, signing of PPAs etc.)
 - capacities to be tendered out per auction round
- Avoid high fluctuation in tendered capacities
- Approach changes of auction rules with care and sufficient lead times

Thank you for your attention!

Katherina Grashof

Institut für ZukunftsEnergieSysteme (IZES)
Albrechtstr. 22, 10117 Berlin

grashof@izes.de