Procurement of utility-scale renewables in the Global South - Recommendations from the TENTRANS project

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Procurement of utility-scale renewables in the Global South

TENDERING SUSTAINABLE ENERGY TRANSITIONS TENTRANS

Drawing lessons from South Africa, this brief provides recommendations for Danish development cooperation and associated investments in utility-scale renewable-energy procurement in African countries.

RECOMMENDATIONS:

Danish development cooperation and associated investments in sustainable energy transitions in African countries should support governments in setting up national policy frameworks to:

- ensure the effectiveness and efficiency of the auction schemes
- strengthen local production and industrial development
- pay attention to developmental risks when implementing large-scale infrastructure

The role of governments in the energy transition has moved from economic support to regulation

Auctions, also referred to as competitive bidding or tendering programmes, have become the most widely applied mechanisms for procuring utility-scale renewable energy generating capacity. The rise of auctions has coincided with significant reductions to the bid prices for renewable energy technologies in different world regions, including first-mover developing countries such as Brazil, China, Morocco, Peru and South Africa, and European countries, as well as a number of late-comer developing countries in which auctions have only recently been introduced (Kitzing et al., in review).

In most places bid prices are currently competitive to the costs of electricity produced by fossil fuels, including coal. In the years to come developing countries will experience a significant increase in their energy mix in the electricity sector, to be provided by PV and wind. The growing market worldwide has engaged an impressive group of large multinational project developers, independent power producers, and solar and wind equipment producers, which are offering their assistance to countries in the Global South and providing a full package of knowledge, capital and technical solutions. We are hence facing what has been called a second phase of energy transitions in the Global South, where governments need to be equipped to reap the benefits of this transition in terms of industrial development, local job creation and socio-economic development more broadly.

To study the implications of this development in the Global South, in 2017 the Tendering Sustainable Energy Transition (TENTRANS) project embarked on a three-year research programme with a focus on the development implications of the utility-scale renewable energy procurement programme in South Africa. The aim of this policy brief is to draw out a few recommendations for how Danish development actors can assist countries in the south in meeting the development challenges mentioned above.

Procurement of utility-scale renewables in South Africa

South Africa is among the early adopters of auctions as a way of procuring renewable electricity. Auctions for 'utility-scale' installations are conducted as part of the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), implemented in four rounds of bidding held from 2011 to 2015 (Leigland and Eberhard, 2018). Auction winners, that is, the successful independent power producers (IPPs), have signed twenty-year power purchase agreements (PPAs) with South Africa's vertically integrated utility ESKOM.

Before the launch of the REIPPPP in 2011, South Africa had almost no experience with private power investments or renewable energy. The designers of the auction programme were thus focused on ensuring that the programme was effective, meaning that the successful projects would be built on time and that they would provide overall socio-economic benefits. The auction design consequently used a range of stringent qualification and evaluation criteria, including contributions to job creation, local content, ownership, management control, preferential procurement, enterprise development and socio-economic development (Kruger et al., 2021)

More specifically, the bids were evaluated against price criteria (70%) and a set of social development criteria (30%). The IPPs are expected to take on the responsibility for supporting social development in communities within fifty kilometres of project sites and are required to deliver a share of the proceeds to Community Trusts. A percentage of project revenues (so far a minimum of 1%) is to be dedicated to local socio-economic initiatives in communities, for example, in education, social welfare, health-care, enterprise development and administration (IPPO, 2020).

From its beginnings in 2011 until 2020, the REIPPPP procured more than 6000 MW of electricity from 112 wind- and solar project companies (compared to, e.g., 6200 MW of total installed wind power in Denmark) and reduced carbon emissions by 50.2 M ton of CO_2. This led to private investments in wind and solar development of R 209.7 billion (DKK 86 billion), of which 20% was sourced from abroad. A total of R 1.2 billion (DKK 500 million) has been provided to date through the scheme to support socio-economic development (IPPO, 2020).

The TENTRANS research project is a three-year research project with the overall objective of understanding how the design of RE tendering schemes for wind power can drive a transition towards sustainability in SA, and what the development implications are in terms of local community development and local industrial development.

Overall, the project draws on the sustainability transition literature, including the concept of institutional work. To explore the three interlinked research questions regarding the project, insights are drawn from the literature on auction design, global value chains and the institutional literature on governance and institutional change (Swilling et al., in review).

The project, which is being led by the UNEP DTU Partnership in Denmark, includes researchers from DTU Wind and DIIS in Denmark, and the University of Stellenbosch and University of Cape Town in South Africa. Private partners are the Danish and South African wind energy associations: Wind Denmark and SAWEA.

Recommendations for Danish development cooperation based on lessons from the REIPPPP

Danish development cooperation and associated investments in sustainable energy transitions in African countries should support governments in establishing national policy frameworks to:

1. Ensure the effectiveness and efficiency of the auction schemes

The research shows that South Africa reached the same level of bid prices through the four bidding rounds as a sample of EU countries, despite the small amount of prior experience with renewable energy in South Africa. The research suggests that this is mainly due to a well-designed auction scheme that ensured competition, and the fact that the institution responsible for the auction was considered trustworthy. Due to the strict qualification criteria, the auction had an almost 100% completion rate (Kitzing et al., in review).

The overall lesson to be learned is that the long-term continuity and predictability of auction schemes is more important than the technicalities of auction design, as this guarantees competition, price reductions, and industrial and socio-economic development (Kruger et al. 2021, Morris et al., 2021, (Swilling et al., in press). However, the details of auction design are important and need to be tailored to the specific conditions of each country. Research, technical support, capacity-building and institutional strengthening to ensure the best quality auction design can therefore be important elements of Danish support, not only to growth and transition countries, but also to least developed countries in Sub-Saharan Africa.

2. Strengthen local production and industrial development

A sustainable transition to renewable energy should include local industrial development that captures a reasonable share of value-added and creates local jobs and incomes. This objective was on the agenda in South Africa from the outset of the REIPPPP, but our research shows that in the South African case these objectives were not fulfilled as much as they might have been. The lesson learned in this regard is that governments and institutions responsible for the auction process should develop and implement policies which:

- Bridge existing energy and industrial policies and ensure that local content requirements are targeted and aligned with industrial strength (Hansen et al. 2020, Morris et al., 2021)

- Support localization of the main sub-component manufacturers, acknowledging that plant manufacturers mainly rely on their preferred suppliers for subcomponents, which need predictable conditions to establish themselves locally (Larsen and Hansen, 2020, Morris et al., 2021)

- Support market conditions for 'industries without smokestacks', and acknowledge that local service industries have lower access barriers to engaging in renewable energy value chains than traditional manufacturing industries (Hansen et al., 2021; Davy et al., 2021)

3. Pay attention to developmental risks when establishing large-scale infrastructure

The lesson from establishing large-scale renewable energy projects in Denmark and developing countries alike is that such projects create tensions in local communities due to diverging interests in such new infrastructure projects, with conflicts over land, property, the environment and the visual impact.

Due to the political focus on inequality and developmental needs, project developers have been obliged to invest significant amounts in development in communities near the projects. This provides a new set of opportunities to achieve development benefits in nearby villages, but it also adds a new layer of complexity to the governance of the general conflicts mentioned above. The lesson learned in this regard is that governments and institutions responsible for the auction process should develop and implement policies which:

- Support community co-ownership of renewable energy generation and democratic governance of benefit-sharing arrangements (Funder et al., 2021)

- Support the development of practice frameworks for community engagement, and draw on the experiences of other sectors to ensure that community development is governed by inclusive, transformative and up-to-date approaches (Davies et al., 2018; Wlokas et al., 2017)

- Include well-designed social development criteria in auction schemes in cases where governments are not able to provide basic community infrastructure and social services, and draw on the experience of South Africa (Swilling et al., in press)

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