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Policy Brief

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Still a long way to go

Energy security and green growth in Indonesia

Issues related to energy security are at the heart of the political debate in Indonesia, because economic growth depends critically on access to affordable energy[1]. Demand for energy is growing fast: total primary energy demand is expected to more than triple by 2030; electricity demand is set to quadruple and demand for transport fuel will increase more than threefold. The current growth trajectory is not economically and environmentally sustainable, as is evidenced by the increased dependence on energy imports, the growing problem of mobility and air quality in urban areas, continued loss of forest areas and biodiversity and the steep rise in energy-related greenhouse gas emissions. To change this trend, solutions are needed that are more sustainable *and* have a positive impact on energy security, but these typically require large-scale investments and consistent long-term policies – two issues that Indonesia struggles with. Structural challenges in Indonesian politics and governance mean the country cannot work on the basis of 'business as usual' fossil fuel-based responses to energy security challenges, making it harder for green growth solutions to break through. While this would suggest that the case for green growth is currently not convincing enough to outweigh the challenges, and that the situation is likely to get worse before it gets better, there are glimmers of hope when it comes to the medium-term horizon. The key questions of this policy brief are therefore how legitimate energy security considerations could become an enabler for green growth and what can be done to shift towards a more climate-compatible pathway.

Energy security and green growth in Indonesia

Indonesia has an abundance of energy resources and is a major consumer and exporter of fossil fuels. While it is the largest global exporter of steam coal (used for power plants), domestic demand for oil and gas are steadily outpacing local production. In the past decade, Indonesia has become a net importer of oil and oil-based products, and it is expected that by 2020 domestic gas supply too will be insufficient to meet demand.

Since Indonesia is so well endowed with energy resources, energy security is often perceived as a logistical problem rather than one involving trade-offs and political choices. Many Indonesians consider the availability of cheap energy a constitutional right. Arguably, it has brought positive developments such as economic growth, social mobility and access to energy, mainly through subsidising energy consumption: the country has a long history of setting retail prices below market

1 IEA defines energy security as "the uninterrupted availability of energy sources at an affordable price" [link]

rates or even below cost recovery levels. However, in recent years, fuel and electricity subsidies have become such a burden on the national budget that they are affecting funds available for infrastructure, education and social welfare (and even the country's credit rating)[2]. The current phasing out of energy subsidies exposes customers to higher and likely more volatile prices for fuel and electricity, whereas this was previously 'buffered' by the state budget[3]. So far, the population has accepted this move, but this is likely to have been due to the low oil price in recent years rather than support for climate action. There are concerns that the population will turn to violent protest and demand reintroduction of subsidies when oil (market) prices increase.

Power supply in Indonesia, around 54 GW in 2014, is mainly powered by coal (53%), gas (24%) and oil (12%), with only a very small role for hydropower and geothermal. Over the years, the electricity generation mix has changed in favour of (cheap) coal and phasing out (expensive) oil generation, while the shares of gas and renewables have been relatively stable. Investments across the energy sector have been inadequate for over a decade due to unavailability of finance combined with constraints in policy, planning and implementation arrangements. State-owned enterprises have been in rather poor financial shape and private investors have to date been reluctant because of regulatory, institutional and policy risk. Unless the government is able to mobilise investments on a substantial scale, an energy crisis is a real and imminent threat[4].

Existing efforts to keep up with energy demand emphasise expansion of coal-based power supply and are likely to lead to a surge in energy-related greenhouse gas (GHG) emissions. Currently 'only' 26% of national emissions come from the energy sector (dwarfed by emissions from peat and forest fires), but it is expected that energy will overtake the land-based sector as the largest source of emissions to account for 50% of total emissions by 2030[5]. As part of its pledge to the Paris Agreement on Climate Change, Indonesia has the ambition to reduce its GHG emissions by 29% by 2030 (and up to 41% with international support). One-third of the emission reduction is supposed to come from the energy sector, which many consider highly ambitious. Plans do exist to mitigate climate change, but they seem rather detached from the energy situation and government resources to implement them.

Win-win actions for energy security and green growth

Not all clean energy technologies will improve energy security (especially more costly or vulnerable choices), just as not all actions to improve energy security are consistent with green growth (such as the use of cheap domestic fossil fuel). Indonesia is fortunate in that there are options available that offer win-win outcomes for both green growth and energy security. Starting in the energy sector, perhaps the most obvious opportunity comes from geothermal energy. Indonesia currently ranks third globally in terms of geothermal potential with an estimated 29GW. However, it is only using around 5% of its potential[6]. Waste-to-energy can also help Indonesia's municipal waste management challenges, which have seen increasing waste volumes overwhelming the limited landfill capacity available[7]. Below utility-scale generation, there are opportunities from small-scale

2 IEA (2015: 30-34) *Energy Policies Beyond IEA Countries - Indonesia 2015*, IEA, Paris.

3 In the context of Indonesia's membership of the G20, the subsidy phase-out was presented as contributing to stabilisation of public finances *and* to climate change mitigation.

4 "energy supply becomes increasingly costly and unreliable, and access will be oriented towards economic growth centres" in ADB (2015b:12) *Summary of Indonesia's Energy Sector Assessment*, ADB Papers on Indonesia No 9, Jakarta, 2015.

5 WRI (2016) *CAIT Climate Data Explorer*, last accessed August 2016. Indonesia's current emissions are 2.0 Gton CO2-eq. Without serious mitigation efforts, this is expected to grow to 2.9 Gton CO2-eq. in 2030.

6 IEA (2015) *Indonesia has significant potential to increase geothermal electricity production*, IEA Today in Energy, Paris, October 2015 [link]

7 See Carbon Trust (2014) *Waste to energy in Indonesia*. [link]

renewables, especially where these displace expensive and polluting diesel generators (e.g. in remote and/or island settings), reducing the exposure of those relying on them to unreliable and expensive supplies of liquid fuels.

Energy efficiency represents a third opportunity to unite green growth and energy security objectives. Years of subsidised energy prices have made the business case for most energy efficiency projects very challenging. With most subsidies now phased out, there is a real opportunity for the industrial and commercial sectors to increase their energy efficiency, making financial savings, reducing their emissions and reducing the strain on the electricity grid.

Finally, the enormous need for investment in the transport sector is difficult to ignore, as anyone who has tried to commute in urban areas of Indonesia will testify. Upgraded public transport infrastructure has substantial potential for green growth and energy security outcomes, as it offers fuel savings and reduced need for oil imports alongside reduced emissions, as well as a raft of other benefits including improved air quality and reduced urban traffic congestion.

To understand why these win-win opportunities are thus far underutilised, one needs to be aware of a number of structural challenges Indonesia faces, especially related to political arrangements and development drivers.

Dealing with structural challenges

As the largest economy in South-East Asia, Indonesia is an incredibly diverse country with a population of 250 million people, comprising 300 ethnic groups spread across an archipelago of 17,000 islands. After being hard-hit by the 1997 Asia Financial Crisis, it initiated democratisation and decentralisation processes and managed to recover to modest economic growth rates – mainly on the back of commodity exports.

Indonesian politics is facing structural challenges that may prove to be a major obstacle to growth. Almost 20 years after the first democratisation and decentralisation programmes started, Indonesia has been confronted with several structural challenges that affect government capacity to operate effectively and efficiently. Decentralisation has brought stability, but local civil servants have insufficient capacity to turn large central government budgets into public services, transactional politics blur the lines between private and public interests, institutional arrangements perpetuate patronage and corruption, and land conflicts are frequent.

Economic growth

Indonesia's economic model is not a 'western style' market-based system[8]. The Indonesian government plays an active role in controlling the economy. With an extensive bureaucracy and over one hundred state-owned enterprises, it participates in economic activities, controls trade and sets prices of basic goods such as rice, fuel and electricity. For the medium to long term, Indonesia's challenge is to move from a resource-based economy with high exports of primary commodities to less volatile and higher value-added, labour-intensive manufacturing as the engine for growth. To achieve this, the most pressing challenges include increasing investments in infrastructure development, increasing skills and moderating wages while ensuring employment, and increasing overall economic productivity.

Decentralisation

In 1999, the Indonesian elite decided to transfer a major share of administrative, political and financial power to local governments. To prevent the 27 provinces from trying to secede from the motherland, most of the power was transferred to the next level down, to 314 districts, in 1999, reasoning that it was unlikely that any single district would ever grow strong enough to break away. An important feature of the

8 Rosser (2002) *The Politics of Economic Liberalisation in Indonesia - State Market and Power*, Routledge.

decentralisation process was the sharing of mineral resource revenues. Oil and gas revenues flow mainly to the central government, while (coal) mining revenues go mainly to the producing district and province. The asymmetrical revenue-sharing model channels revenues back to resource-rich districts and their neighbours and the redistribution of revenues from central government to provinces and districts was carried out to support 'balanced geographical growth'.

Urbanisation and the rising middle class

Urbanisation and suburbanisation have transformed Jakarta and several other cities on Java into Asian megacities. Currently, the city of Jakarta is the tenth largest in the world with around 10 million inhabitants, while the greater Jakarta area is home to over 30 million people. Whereas in 1970 18% of the population lived in urban areas, this grew to over 50% in 2015 and is expected to reach two-thirds in 2030. The increase in urbanisation and middle class affluence coincides with what is called Indonesia's demographic dividend: the reduction in birth rates during the late Suharto era results in a very high proportion of the population being of productive working age, compared to the proportion that depends on their income.

International relations

The current president, Joko Widodo, introduced a foreign policy vision based on Indonesia as a maritime power in a conflict-prone region. President Widodo has a pragmatic attitude towards foreign relations, clearly built around national economic interests: while the previous president SBY emphasised in his 2009 inaugural speech the aim of "having a million friends and zero enemies", President Widodo was more critical, stating, "What's the point of having many friends if we get only the disadvantages?"[9]. This openness is causing friction with nationalist sentiments, while rising protectionist measures driven by economic nationalism have sent negative signals to potential investors[10].

Challenges for green growth

In addition to structural challenges posed by the political system, and key drivers that are likely to shape development in the coming decades, three specific challenges affect green growth initiatives:

Lack of consistent coordinated long-term direction

The Indonesian government has a range of different priorities related to energy and climate: fast and cheap expansion to keep up with demand and ensure energy security, improved access to modern energy services, increased share of renewable energy in the mix, increased use of domestic (coal) resources and reduced greenhouse gas emissions. Each goal has an ambitious top-down target, which on its own might make sense, but combined the policies that would be needed to implement these objectives can only lead to competing and conflicting solutions. This inconsistency and lack of long-term credible policy direction makes it difficult for state-owned enterprises to deliver, and it deters private investors who perceive it as a policy risk.

Lack of investment capital

Lack of available capital seriously constrains (energy) infrastructure expansion in Indonesia. As a result of a combination of a relatively small tax base and shallow domestic financial markets, there is a need to attract investments from abroad, either from foreign (multilateral) development banks or from private investors. Private investors, however, are wary of the many risks they perceive in investing in Indonesia, such as the lack of transparency that results from the structural challenges and the lack of policy certainty described above. In addition,

9 Economist (2016) *Less talk, more action – Indonesia's stance towards the rest of the world has become more assertive*, Special Report on Indonesia, Economist print edition, 25th February 2016.

10 ISEAS (2015b:11) *Rising Economic Nationalism in Indonesia*, ISEAS Perspectives 59/2015; ISEAS (2015c) *Amidst Indonesia's Nationalist Atmospherics: The Changing Politics of Jokowi's Economics*, ISEAS Perspectives 2015/64.

the business environment is afflicted by red tape and fears about the creditworthiness of state-owned enterprises.

Low priority of green growth

For the wider public and the private sector, and thus for politicians too, energy security is a much greater priority than climate change. It is generally understood that failure to provide secure energy supplies can bring rapid and major disruption, whereas the impacts of climate change will only be felt in the future. In general, there is not so much opposition to green growth but rather a lack of specific interest – the dominant priorities for energy policy are to keep up with demand growth while keeping costs low.

Pressure to exploit domestic coal reserves

When faced with pressing energy supply challenges and the need to build substantial amounts of additional generation capacity, Indonesia like other countries with ample domestic fossil fuel reserves is likely to face considerable internal political pressure to exploit such resources, regardless of whether this is economically or environmentally optimal or not. Interest in exploitation of domestic coal reserves combines with the greater priority given to energy security over climate action and the generally low level of concern for environmental sustainability to severely limit the political space for ambitious green growth goals and policies.

Could investments in energy security become a positive force for green growth?

As shown above, Indonesia is facing serious and imminent energy security challenges and if these are not addressed adequately and in a timely manner, it will hamper economic development in the coming decades. The Indonesian government has hence identified further investments in energy security as one of its priorities. This opens up the opportunity of a convergence of green growth solutions with improving energy security in Indonesia: increased efficiency can reduce pressure on supply expansion, renewable energy can offer economically attractive alternatives to fossil-based power generation and shifting from private to public transport and more efficient modalities can reduce exposure to international oil price fluctuations while improving mobility and air quality. Further analysis could identify other areas where energy solutions contribute to both objectives, especially as possible co-benefits, such as implications for employment, growth, regional development and health, are identified and taken into consideration.

However, there is still a long way to go. Analysis shows that currently energy security is not yet harnessed as a positive force for green growth – nor vice versa. This leaves a number of opportunities untapped: whilst energy security deteriorates and the Indonesian political environment faces significant structural challenges as outlined above, the current energy investment pathway is following a 'business as usual' fossil fuel-based path. This would make international climate and development commitments difficult to keep and would not contribute to alleviating domestic demand for mobility and improved air quality. However, this unsustainable pathway is not inevitable.

There is hope: win-win actions for energy security and green growth will occur more often as, for example, clean technology costs drop, the energy security situation becomes more dire and the government reform agenda succeeds in strengthening the enabling environment for climate-compatible investments, fostering increased private sector and grass-roots mobilisation, and when foreign direct investments are focussed more specifically on climate *and* energy security. Overall, in order to harness the positive benefits of solutions for green growth and energy security, long-term credible policy coordination will be necessary to mobilise the required investments. The Indonesian government's ongoing reform agenda and the positive influences presented here could become more prominent over time – especially if facilitated and fostered by the government and key stakeholders in Indonesia, thus reinforcing a convergence of green growth and energy security goals. This will then

contribute, in the medium and long term, to making a green growth development pathway for Indonesia an increasingly convincing and obvious alternative.

Notwithstanding the challenges facing Indonesia's uptake of clean energy, several positive influences are emerging that can strengthen the convergence of green growth and energy security agendas:

- *Political change and improved governance and coordination.* Joko Widodo's presidency, despite having been formed as a national coalition that functions under compromises with the business-as-usual of transactional politics, has raised expectations from its outset. The platform introduced by President Widodo, known as NAWA CITA (nine priorities), outlines his vision for his administration and includes key aspects to curb some of the structural challenges related to governance, including: developing clean, effective, trusted and democratic governance; greater accountability for the performance of public institutions; open information for citizens and much-needed public service reform; reform of law enforcement agencies; and a push for substantive land reforms[11]. Charting a course that maximises energy security while reducing emissions will require coordinated policymaking and credible institutions for effective implementation. President Widodo's platform recognises this and is creating space for initiatives to improve governance, coordination and service delivery. Although some promising initiatives are emerging, notably with support from international donors including the World Bank, the EU and several bilateral programmes, it is too early to say whether these are effective in driving real and lasting change.

- *Increased focus on bringing in FDI.* Growing interest from international institutional investors in moving to climate-compatible assets can present another opportunity for green growth. With a low domestic tax base and shallow financial markets, Indonesia is highly dependent on foreign investments for infrastructure, something which the government has promoted by means of tax holidays for foreign investors and deregulation in key sectors in late 2015[12]. For the energy sector such incentives are unlikely to be sufficient, since private sector investors fear policy inconsistency coupled with transparency issues. Here international public finance is likely to be a precondition to mitigate risks and leverage private sector investment. At the same time, development support and climate support are moving closer together, unlocking significant public resources that are available to green infrastructure but in other ways.

- *Private sector and grass-roots mobilisation.* The financial sector (e.g. Bank of Indonesia and the Financial Services Authority OJK) and business associations (e.g. the Chamber of Commerce Kadin) have started to recognise that sustainability presents opportunities to save costs and to develop new products and markets and recently launched several initiatives looking to turn green growth into a competitive option. While civil society mobilisation has always played an important role in Indonesia, it has seldom managed to stand up successfully to powerful political and economic interests that are detrimental to the environment. However, there are some small signs that this is changing, mainly driven by falling costs of clean technologies (e.g. solar technology) and increased importance of international climate and development commitments (e.g. the Sustainable Development Goals, or SDGs, and the Paris Agreement on climate action).

11 UNDP (2015) *Converging Development Agendas: Nawa Cita, RPJMN and SDGs* [link]

12 CNBC (2015) *Is Indonesia finally getting serious about boosting FDI?* Asia-Pacific News, September 3rd 2015 [link]

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