



Munich Personal RePEc Archive

## **Understanding the political challenges of introducing a carbon tax in Indonesia**

Rakhmindyarto, Rakhmindyarto and Setyawan, Dhani

Fiscal Policy Agency, Ministry of Finance of Republic of Indonesia,  
Jalan Dr. Wahidin Raya, No. 1, Jakarta, Indonesia

8 April 2020

Online at <https://mpra.ub.uni-muenchen.de/111586/>  
MPRA Paper No. 111586, posted 24 Jan 2022 09:09 UTC

# Understanding the political challenges of introducing a carbon tax in Indonesia

**Rakhmindyarto**

**Dhani Setyawan**

Fiscal Policy Agency, Ministry of Finance of Republic of Indonesia, Jalan Dr. Wahidin Raya, No. 1,  
Jakarta, Indonesia

## **Abstract**

Indonesia is the 6th largest carbon emitter in the world. It is also one of the most vulnerable countries to climate change, with a population of 250 million people spread across thousands of islands and low-lying coastal areas. This paper investigates the political challenges to introduce a carbon tax as a climate policy option in Indonesia. It is based on the analysis of 29 indepth elite interviews with key Indonesian stakeholders. It finds that, while political elites seem, in principle, to be open to the idea of a carbon tax, they are also cognisant of the impact of corruption challenges in the Indonesia context. Meanwhile, the business community opposes a carbon tax and fears the introduction of additional costs that may influence productivity and competitiveness. Non-government organisations, however, support its immediate introduction. Overall, this work makes an important contribution to the ever-growing academic debate on the introduction of carbon prices to assist carbon mitigation efforts. It also has important ramifications in terms of transparency, accountability and political pluralism in Indonesia.

**Keywords** Climate change, Climate policy, Carbon prices

## **Introduction**

Indonesia is extremely vulnerable to the effects of climate change due to its high greenhouse gas emissions (GHG). The land sector contributes significant share of Indonesia's GHG, whereas this is mostly a result of deforestation<sup>1</sup> (Jotzo 2012). The highest rates of deforestation in Indonesia occurred in 1990s, with forests in Sumatera and Kalimantan rapidly vanished (Tsujino et al. 2016). Peatlands also contributes a quite significant GHG emission to Indonesia's land-based, particularly during early 2000s (Page et al. 2002). The burning of oil, gas and coal provides another significant part of Indonesia's GHG emissions profile. Based on the recent data from the Indonesian Ministry of Environment and Forestry (2019), transportation and manufacturing sectors had contributed for around 48 per cent of carbon emission in Indonesia.

The emissions sourcing from this sector has been growing substantially at around 6 per cent per year, where its growth rate has been doubled every 12 years (Jotzo 2012). Bappenas (2015) projected that emissions from this sector will compose more than a half of total emissions in Indonesia by 2030.

In a short-term, the most potential GHG reductions can be gained from the forestry and land-based sector; however, to sustain a long-term emission reduction, Indonesia should enforce a reform in the energy sector (Jotzo 2012). In the absence of sound policy measures to decarbonize the energy sector, Indonesia's emissions profile would likely to shift to more energy-intensive activities (World Resources Institute 2017). Further, Garnaut et al. (2008) argued that important measures to shift to lower carbon energy sources is needed to halt the high growth of carbon dioxide emissions sourcing from fossil fuel use. Thus, as discussed above, Indonesia required to strategize its energy policy measures and aligned it with the effort to reducing its GHG emissions, particularly in the energy sector.

The policy alternatives to restrain emission growth from energy sector include shifting to develop lowercarbon energy markets and improving energy efficiency policy. Indonesia has many opportunities to do these measures. However, to attain a sound result, it would require a substantial change to the policy instruments, institutional framework and fiscal measures, particularly to the energy sector. Some of these changes might encounter political hurdles and practical difficult in implementation.

Many studies observe the aversion of policymakers in adopting carbon taxes and their preference for other policy measures, which indicate their country's voters' attitudes (Hsu 2012; Kallbekken and Aasen 2010). Leiserowitz et al. (2013) conducted a survey to American citizens and observed that only 43% would promote a carbon tax, while 71% support tax rebates for energy efficient vehicles. Other qualitative and quantitative studies also found different people's preference about low-carbon incentives over taxes (Cherry et al. 2012, Steg et al. 2006). The enforcement of carbon tax measures surely raises the expense of consuming energy which could be harmful for improving energyintensive industries competitiveness. This competitiveness consequence might result in negative environment and economic outcomes, such as companies may remove facilities to other regions, that could lead to increasing emissions in these new locations (Aldy and Stavins 2012).

However, a carbon tax is thus a greatly appealing alternative from the standpoint of economic policy reform. This is highly regarded as the most effective and efficient scheme of establishing economy-wide stimulus to reduce GHG emissions (Stern et al. 2006). The implementation of carbon tax would create hurdles for high emission activities which could provide incentives for lower-emission investments.

Further, this policy could provide source for fiscal revenues that could be allocated in compensating poor people for the additional taxation and to offset other taxes (Jotzo 2012). By employing a computable general equilibrium, Yusuf and Ramayandi (2010) found that taxing carbon and cutting fuel subsidy could lead to reduction in carbon emissions and energy consumption. Further studies of Yusuf and Resosudarmo (2015) and Ministry of Finance (2009a, b) suggest that the implementation of carbon tax in Indonesia could reduce poverty and increase economic output as measured by GDP. Thus, Indonesia needs to strategize its energy plan and to consider providing a basis in developing a lower carbon pathway by imposing tax on carbon emissions as viable measure.

Here, two questions to be answered are, if a carbon tax is the most effective and efficient policy instrument to reduce GHG emissions, then why it is so difficult to pass through the legislative process? And why are most politicians not supportive of a carbon tax as a policy choice? The political economy of a carbon tax is very challenging. Large carbonintensive industries such as coal industries and electricitygenerating firms that use coal as fuel, have the power to refuse a carbon tax because such a policy does not benefit them (Downie 2018). Supporters of carbon taxes come from the renewable energy industries who are not powerful enough to fight their carbon-intensive industry rivals. Thus, realistically, they propose government subsidies for renewable energy technologies which appear to have a greater possibility of having the legislation passed (Hsu 2012).

This study aims to analyse the political challenges to the introduction of a carbon tax in Indonesia. These challenges have been inductively identified through textual analysis of the interviews with Indonesian elites. A carbon tax presents political challenges because of the strong influence of business stakeholders in the policymaking process, and because many politicians would oppose its introduction during the legislative process. In addition, a carbon tax is also difficult to introduce because of lack of political will from the Ministry of Finance as the main fiscal authority.

This study may contribute to policy process in the developing world by providing insights about the climate mitigation policymaking process from Indonesian elites' perspective. Studies about climate mitigation policy process in developing countries are still limited; thus, this study attempts to fill this gap in the literature, particularly in Indonesian context. Even though there is a number of researches on a carbon tax in Indonesia, most of these have investigated the distributional impacts of a carbon tax (Ministry of Finance 2009a, b; Nurdianto and Resosudarmo 2016; Yusuf and Resosudarmo 2015).

There is yet no research which has attempted to analyse the potential for the introduction of a carbon tax based on interviews with Indonesian elites from key stakeholders. This study attempts to fill this gap, by analysing the political challenges of introducing a carbon tax in Indonesia using elite perspectives. This study has been carried out in Jakarta, Indonesia from 1 January 2018 to 31 December 2018.

## **Literature review**

Many studies believe carbon tax policy is an efficient climate policy to reduce GHG emissions in Indonesia (see, e.g. Baranzini et al. 2017; Mehling and Tvinnereim 2018; Mankiw 2009; Stiglitz et al. 2017; Hsu 2012; Stern 2008). Other studies also acknowledge that introducing a carbon tax also presents significant challenges (see, e.g. Andrew et al. 2010; Jenkins and Karplus 2017; Morris 2016; Rozenberg et al. 2012; Chiroleu-Assouline and Fodha 2014; Wang et al. 2016; Baylis et al. 2013; Gray and Metcalf 2017). A carbon tax is defined as “a tax on fossil fuels in proportion to the amount of atmospheric carbon dioxide that is released when they are burned” (Poterba 1991). From Poterba’s generic definition, it can be said that a carbon tax is imposed based on carbon content emitted by firms when they burn fossil fuels (e.g. coal, oil, and gas) for energy usage. In a broader definition, Mehling and Tvinnereim (2018) have defined a carbon tax as “initiatives that put an explicit price on greenhouse gas emissions, i.e. a price expressed as a value per ton of carbon dioxide equivalent (tCO<sub>2e</sub>)” (Mehling and Tvinnereim 2018).

A carbon tax is a type of environmental tax or “Pigouvian tax”. A Pigouvian tax is named after Arthur Pigou—a British economist—who used taxation as a policy tool to reduce environmental damage. Pigou’s recommendation to tax a negative externality is one of the earliest modern concepts of environmental taxes. It is based on the idea that the costs of negative externalities can be internalised by imposing a tax to reduce these externalities (Baumol and Oates 1971). The concept of imposing a Pigouvian tax on externalities seems to be the best solution for all pollution problems. However, supporters of the free market who dominate the economic playing field compete against government direct intervention policies (Andersen 1994). In 1960, in his article, *The problem of social cost*, Coase harshly criticised the Pigouvian tax mechanism, claiming that where externalities exist, under certain conditions, the market mechanism will lead to optimal resource allocation on its own (Baumol 1972).

Coase and his supporters highlighted the impacts of imposing an environmental tax to correct market failure. They argued that the administrative costs of introducing an environmental tax would be higher

than the resources lost from market failure. This is counter-productive because the tax aims to correct market failure. Hence, Coase's followers claimed that an environmental tax on pollution might be worse than the damage it aims to address (Baumol 1972). Despite this criticism, environmental taxes are recognised in general as practical policy instruments for reducing pollution or emissions in the context of climate change. However, current practices and policies related to environmental taxes may differ from a traditional Pigouvian tax. The following passages discuss various rationales and challenges of introducing a carbon tax.

A carbon tax is an important instrument for reducing GHG emissions in response to climate change. It is expected that this policy tool will decrease the human-induced climate change that has been threatening our planet. The industrialisation era since the beginning of the twentieth century has resulted in an environmental crisis. In his study in 2009, Lohman claimed that the crisis of GHG pollution is a market failure which needs to be addressed by a price on emissions through government regulation (Mete et al. 2010). Market failure occurs when some aspects of the production process are not included in the transaction costs. The failure is indicated by the fact that the GHG pollution produced by companies is not included in the production costs nor is it part of the firm's responsibilities (Andrew et al. 2010). Therefore, the entire society shoulders the burden of the costs associated with pollution.

Putting a price on carbon emissions (through a carbon tax or a cap-and-trade programme) has been a popular climate mitigation policy. Pricing the harmful emissions is a primary option to encourage a transformation towards cleaner energy technologies (Cleetus 2011). Goulder and Schein (2013) claimed that emissions pricing policy is "a main theoretical attraction" to the extent that it has the potential to reduce emissions more economically than other policy instruments such as obligatory technologies or performance standards.

Metcalf (2009) suggested three advantages of implementing a carbon tax to address GHG emissions: first, the tax would create a certain price on carbon emissions which would encourage carbon emitters to reduce their emissions through low carbon investment; second, if the government was determined to have a revenue-neutral carbon tax, it would be likely to be politically acceptable and avoid political resistance; third, a carbon tax could be implemented with low administrative costs. In his study, Hourcade (1993) provided two additional benefits of a carbon tax: an environmental double dividend, and an economic double dividend. An environmental double dividend means that a carbon tax would reduce GHG emissions while, at the same time, it would decrease local pollution. A carbon tax would also have an economic double dividend because if the revenue was used in a recyclable way, it could

have a positive impact on economic growth, employment, and technological innovation (Baranzini et al. 2000).

The economic and environmental benefits of a carbon tax are also pointed out in several other studies (see, for example Böhringer and Rutherford 1997; Goulder 1995; Parry and Bento 2002). Another benefit of a carbon tax has been proposed by van Heerden et al. (2006), which demonstrated a triple dividend from a carbon tax in South Africa, including emissions reductions; increases in GDP; and a reduction in poverty when a food tax break is included. In the case of South Africa, according to the study by Van Heerden et al. the carbon tax reduced CO<sub>2</sub> emissions by 1.115 Gg CO<sub>2</sub> per 1 million Rand (US\$ 70,000) in tax revenues. If the revenues were recycled to include an indirect tax break, the CO<sub>2</sub> emissions would be reduced by 1.024 Gg CO<sub>2</sub> per 1 million Rand revenue recycled. Finally, a combination of a carbon tax and a food tax break increased real consumption of the poorest households by 12.4% per 1 billion Rand (US\$ 70 million) tax revenue recycled.

Despite the advantages, a carbon tax would face numerous economic challenges which would make it politically “infeasible” (Hsu 2012). The ‘losers’ under such tax would be readily identifiable and would often lobby against such policies. Furthermore, consumers might react negatively to price increases in high-emissions products and services such as electricity and transport fuels, even though the revenues from the carbon tax would be recycled through tax reductions or welfare measures.

One of the main arguments challenging the introduction of a carbon tax is the impact on the economy. Many argue that introducing a carbon tax would weaken the economy. Questions emerge about what the impacts would be on the macroeconomics, and what the distributional consequences would be if a carbon tax were to be established by policymakers (Morris 2016).

Governments around the world have supported carbon pricing policies because they are the most effective and efficient climate policies to reduce carbon emissions, as recommended by economists and other experts (Mehling and Tvinnereim 2018; Stiglitz et al. 2017). However, even though economically feasible, carbon pricing (both in the form of emissions trading and as a carbon tax) often fails in the political realm. In general, carbon pricing policies face political constraints and are not “politically feasible alternatives” (Andrew et al. 2010; Jenkins and Karplus 2017). For example, carbon tax proposals have been rejected in the USA, France, Canada, and more recently in Australia where a carbon pricing policy was implemented but then cancelled two years later (Crowley 2017; Harrison 2010; Knox-Hayes 2012; Rozenberg et al. 2012).

Despite the efficacy, simplicity, and low administration costs which are the advantages of a carbon tax as discussed above, a carbon tax also poses a number of political constraints. In a discussion of carbon tax policy in France, Rozenberg et al. (2012) argued that a carbon tax was not a realistic option for the nation. She illustrated that it would be difficult to obtain political acceptance for a carbon tax, and subsequently, in 2010, the government failed to introduce a carbon tax policy because of such political barriers.

Perhaps the most visible evidence of political resistance to the imposition of a carbon tax is the reluctance of the USA and China, the two largest carbon emitters in the world, to adopt national carbon tax regulations. In some countries, carbon taxes also face electoral resistance or political opposition in the legislative process. For example, in Canada and New Zealand, carbon tax proposals were rejected after elections, while in South Korea and Taiwan, plans for a carbon tax were halted during the legislative process (Lo 2013). However, China now has significant commitments to implement a nationwide Chinese carbon pricing policy, scheduled to be operational by 2020 (Skovgaard et al. 2019).

Several studies also analyse the impact of adopting carbon tax measures to Indonesian economy. The Ministry of Finance (2009a, b) studied the impacts of a carbon tax on economic growth and poverty. Results showed that a carbon tax with price of US\$30/tonne CO<sub>2</sub> would increase economic growth by 0.37% and reduce poverty by around 0.56%. It also showed that the emissions reduction would be estimated to 25%. Yusuf and Resosudarmo (2015) investigated the distributional impacts of a carbon tax in Indonesia. The results showed that the implementation of a carbon tax would not necessarily be regressive. Instead, in contrast to most studies from developed countries, a carbon tax on Indonesia's households would result in a progressive distributive effect. Further, Nurdianto and Resosudarmo (2016) studied the economy wide-impacts of a carbon tax in ASEAN region using a multi-country CGE for ASEAN. Results showed that for Indonesia, a carbon tax of US\$10/tCO<sub>2</sub> would increase the real GDP by 0.25% and would reduce GHG emissions by 3.7%. Overall, those studies conclude the importance of applying carbon tax in Indonesia.

It is intriguing that all the arguments in favour of a carbon tax are not enough to incentivise many countries in the world to introduce such tax policy. Countries such as Finland, Denmark, Norway, and Sweden, in addition to the Canadian state of British Columbia, have introduced a carbon tax. However, many industries have been exempted for the sake of competitive advantage, especially those which face international competition. Meanwhile, British Columbia is only a province and Sweden is only a small country (British Columbia's population is under 5 million and Sweden's is under 10 million).



## **Materials and methods**

This study employs grounded theory method as the research strategy to address the research questions. Grounded theory enables an in-depth analysis of a social phenomenon based on dialogue with the participants to obtain data from their experiences (Charmaz 2014; Francis et al. 2016). This approach has been used to analyse the data from 29 Indonesian key stakeholders from interviews conducted between August and November 2016, along with a number of relevant documents.

Grounded theory was selected because it allows for the exploration of the perspectives of Indonesian key stakeholders regarding the opportunities and challenges to the introduction of a carbon tax in Indonesia. The complex political decision-making process of a carbon tax has been explored, allowing for an exploration of the political, economic, and institutional challenges that will need to be faced if the government of Indonesia introduces a carbon tax. Understanding these challenges gives rise to an exploration of the factors that determine the successful introduction of a carbon tax, leading to the ultimate objective of the thesis, to establish the necessary conditions for effective climate policy formulation in Indonesia.

### **Elite interviews**

This study uses interviews as part of an approach developed by Dexter (1970). Elite interviews have been chosen as the principal source of data to obtain stakeholders' perspectives. *Elites* are influential people who have the power to access lots of quality information which cannot be accessed by common officials, and their location is close to political power (Harvey 2011). Elite individuals provide information that is not available to ordinary people and, thus, provide an 'insider' view of politics.

Interviews have been chosen as the data collection method in this study to achieve in-depth insights and responses about the development of a carbon tax policy in Indonesia. The reason why elite interviews have been chosen for this research is because the elites are principal leaders in politics and in the decision-making process including NGOs and business stakeholders are influential in policy communities. As Burnham et al. (2008) suggested, elite interviews are the most effective way to gain information about the decision-making process. They offer information which is often little-known by the media and the public. In addition, the information they provide cannot be obtained through official documents or records of the government.

To encourage the interviewees to speak more freely and in-depth about the subject, this research has used semistructured interviews. The semi-structured interview style has been chosen to allow the interviewees to express their ideas and opinions about the topic under investigation (Liu 2018). When arranging the interviews, information about the research topic and questions relevant to the research topic which are intended as a frame for the interview, are organised. These questions are then used as an interview guide.

### **Participants for the interviews**

In total, 29 participants were recruited and interviewed during the period of August-November 2016. There is no established standard for how many participants need to be involved in qualitative research. However, Creswell (2014) stated that the sample size depends on the research design being used. For grounded theory research, the size typically ranges from 20 to 30 (Creswell 2014). However, Cohen et al. (2011) stated that the size is not the primary concern of purposive sampling; rather, the concern is to acquire information from those who have in-depth knowledge on particular issues, and also to achieve data saturation (Cohen et al. 2011).

Purposeful sampling has been used to identify and select the participants, and to gain information-rich sources for an in-depth understanding of the research question (Patton 2015; Robert 2011). The participants are then selected based on their knowledge, expertise, and experience in their organisation (Van Manen 2014). The objective of participant selection is to ensure that all relevant stakeholders with divergent viewpoints are included. The participants are representatives from different organisational backgrounds relevant to the carbon tax policy process. For ethical reasons, their names and official positions are not mentioned here. Instead, specific codes were used for referring their names and institutions. The institutions and actors considered to be the key stakeholders in this study are as follows:

- (a) Ministry of Finance, Ministry of Environment and Forestry, Ministry of Industry, Ministry of Energy and Mineral Resources, and Ministry of National Planning (Participant code: Gov 1, Gov 2, Gov 3, Gov 4, Gov 5, Gov 6, Gov 7, Gov 8, Gov 9, Gov 10, Gov 11, Gov 12, Gov 13, Gov 14, Gov 15).
- (b) Political leaders/Members of parliament (Participant code: Pol 1, Pol 2, Pol 3, Pol 4, Pol 5).
- (c) Economic players (cement industry, transportation, power generators, steel industry, textiles industry, energy industry, and mining) (Participant code: Eco 1, Eco 2, Eco 3, Eco 4, Eco 5).
- (d) Civil society/non-government organisations (Participant code: NGO 1, NGO 2, NGO 3, NGO 4).

## **Framework of interview content**

Interviews have been carried out to understand the political challenges of introducing a carbon tax in Indonesia. Several guiding questions have been prepared as an interview framework in order to answer the research question as follows:

1. Do you think we have an interest to reduce GHG emissions?
2. Do you think a carbon is tax the best policy option to mitigate climate change in Indonesia? Why/why not?
3. Do you think climate change mitigation policy is a priority in Indonesia's development agenda? What are the indications?
4. Do you think a carbon tax has political economic impacts?
5. Do you think the parliament will support us?
6. What can we do to gain support from politicians?
7. How to involve business players in reducing GHG emissions?
8. How is the role of the Ministry of Finance to support the introduction of a carbon tax?

## **Results and discussion**

### **Understanding political challenges: lack of political support**

Interviews with Indonesian stakeholders showed significant political constraints which have challenged the consideration of the introduction of a carbon tax in Indonesia. These challenges have led to a lack of political support from politicians during the policy formulation process. There are three key aspects identified as political challenges from the interviews which will be analysed here: institutional resistance, business influence, and political conflicts of interest.

### **Institutional resistance**

Numerous stakeholders are involved in the response to domestic climate change policy actions. Major government agencies have been mandated by the government to take the lead on national climate change abatement policies, including Ministry of Planning (Bappenas), the Ministry of Finance, the Reducing Emissions from Deforestation and Forest Degradation (REDD+) agency, and the National Climate Change Council (DNPI). Each has a pivotal role in shaping both domestic and international climate policies. Bappenas takes the lead on national planning, the Ministry of Finance has authority on fiscal

policies, and the DNPI has been mandated to formulate national strategies, programs, and activities on climate change (Halimanjaya and Maulidia 2014). Ideally, these leading government agencies should formulate climate policies and strategies in a coordinated way. However, as discussed above, in practice, policy coordination does not often take place, which leads to incompetent and unintegrated policies.

The participants also mentioned that the Minister of Finance does not have a strong commitment as to whether a carbon tax is a significant climate policy to reduce GHG emissions in Indonesia. Interviews with key Indonesian stakeholders revealed that the Minister was reluctant to discuss a carbon tax as a climate policy alternative. A carbon trading mechanism is preferable for the Minister to consider as a future climate mitigation policy in Indonesia.

An example of a lack of political will is the creation, by the government and within the Ministry, of the Centre of Climate Finance and Multilateral Policy which was initially created as a national think tank to provide climate change-related policy recommendations to the Minister of Finance. It was also designed to promote cross-sectoral coordination with staff members coming from numerous government agencies. However, it is now comprised of staff from the Ministry of Finance and is only a small research unit. Overshadowed by the Multilateral Policy Division within the same department, the role of the Centre of Climate Finance is less clear and has only limited authority on national climate actions.

The barriers come from ourselves. Internally, there is no consensus about the urgency to introduce a carbon tax. Our Minister herself thinks that it is not a wise policy. If there is no political will from the leader, how can you promote the policy? It should come from the leader as the best example. There is no commitment among line ministries about how to address our climate change problems in a coordinated way. It is scattered in each ministry. Each has capacity and capability to create its own strategies (Gov-01).

Lack of political will from the top leader of the Ministry of Finance to bring climate policies to the top of the national agenda has decreased the role of the Ministry in shaping national climate change policies. Instead of being a leading agency, the Ministry of Finance only plays a marginal role in national climate actions. This has become one of the significant challenges faced by the government in considering the introduction of a carbon tax because the Ministry of Finance is a powerful institution.

The political will of the government to address an issue at the beginning of the policymaking process is crucial. This is the first level of the policy process which allows stakeholders to contribute to policy design. The greater the intention of the government to solve a problem, the more likely that the policy

development process can produce effective policy (Bali et al. 2019). According to Kingdon (2011), the recognition of a problem by government is an important step in placing an issue onto the policy agenda.

Kingdon (2011) mentioned that in the policymaking process, the government is the most important policy actor for bringing a problem onto the policy agenda. This is because government holds the formal decision-making authority. However, policy participants outside of government are also important, including interest groups, NGOs, researchers, academics, consultants, the media, and the mass public. They can lobby and influence both inside and outside of government, sometimes occupying government positions, and at other times, becoming consultants and lobbyists. These stakeholders play an important role in framing an issue into a problem that reaches government attention to bring the issue onto the policy agenda.

### **Business influence in the political process**

Business influence has been one of the primary reasons why government policies across nations have often faced political resistance. It is difficult for government to implement policies when the resistance from business stakeholders is strong (Downie 2017). For example, in the context of energy policies, the stronger the resistance from energy-intensive industries, the less successful policy implementation will be (Hughes and Urpelainen 2015). Political resistance from incumbent energy industries are the primary reason for the failure to introduce carbon pricing in North America and Europe.

Numerous studies have shown the influence of business players across the policy sector, including in environmental policies (see, e.g. Downie 2017; Tienhaara et al. 2012; Clapp and Meckling 2013; Tienhaara 2014). Heede (2014) analysed the historic fossil fuel and cement production records of 90 companies across the globe. He traced the source of industrial CO<sub>2</sub> and methane of the 90 largest companies which produce fossil fuels and cement from 1854 to 2010. The study aimed to understand the possible relevance to public policy and to lay the groundwork for the responsibility that should be incumbent on companies that produce GHG emissions. The evidence showed that only 90 companies have been responsible for two-thirds of all global GHG emissions, including Exxon Mobil, Chevron, British Petroleum, Shell, Conoco Phillips, and Peabody Energy (Heede 2014).

The political engagement of business players in Indonesia, as identified in the aforementioned literature, is the main reason that the introduction of a carbon tax has faced political resistance. The interviews also demonstrated the same issue. The participants expressed their concerns about the depth of the involvement of business players across the political arena. They explained that, currently, an increasing

number of businessmen have been positioning themselves as top leaders in political parties and government institutions.

With powerful positions within government institutions, business interests have become highly influential in the policymaking process. As noted by Dryzek (1995), if government policies do not harm their economic interests, policy implementation will likely be successful. However, if the policies are costly to their business, industry will oppose the policy. “It is not a matter of conspiracy, it happens automatically” (Dryzek 1995). Falkner (2008) also supported this statement that, in general, industries will support government policies, but only if they provide benefits for them. Even though the participants acknowledged that a carbon tax is the most efficient climate policy initiative to reduce GHG emissions in Indonesia, they also conceded that a carbon tax would face strong political resistance from incumbent fossil fuel industries, as identified by Downie (2017).

Many members of parliament are coming from business background. Therefore, business interests influence their perspectives because it relates with the business they have. I can say that the more businessmen to be members of parliament, the stronger they are. The business paradigm always perceives that the environment issues are the cost, not the benefit. So, the issue of a carbon tax is not a sexy issue for them. There is no benefit to talk about this issue (Gov-02).

Some interviewees mentioned that large companies have been the most significant challenges to the introduction of a carbon tax. They have powerful influence in the decisionmaking process in favour of their own business interests. The government is not able to force them into compromise because they make such a significant contribution to the Indonesian economy.

The biggest challenges will come from large companies. They are the biggest carbon producers but will not be keen on to pay a carbon tax. They do not want to bear any additional costs for the company. The large companies have influential engagement with the government because they are the main economic players. Companies like cement industries, mining, textiles, steel, energy sectors, and palm oil all of them are high carbon emitters. But the government cannot force them much because they have contributed most to the national economy (NGO-04).

### **Politicians against a carbon tax**

In the previous section, the influence of business stakeholders in shaping government policies was discussed. The participants identified that business stakeholders play an important role in persuading government not to introduce a carbon tax. They have strong lobbies and powerful influence because

large industries which produce most of the carbon emissions are also the main national contributors to economic growth. In this section, this study explores why the political leaders or members of parliament have avoided or refused to consider a carbon tax.

The participants explained that it is unsurprising that the government would face political resistance when introducing a carbon tax because most of the members of parliament are now business players. With the help of democratic liberalisation in the name of the era of reformation, business elites have gained access to electoral politics and expanded their influence and interests in the political realm. Business stakeholders now have a greater political role as a result of increasing their involvement in the policymaking process (Fukuoka 2012).

I believe most of the members of parliament will be against the introduction of a carbon tax. This is because they do not have any interests of this policy. Most of the MPs are businessmen, and their interests are not connected with tax. They want to reduce the tax, not pay more (Pol-04).

First and foremost is a political barrier. The barriers could come from the politicians who will not support the introduction of a carbon tax. This is the case in the countries which have introduced a carbon tax. They prefer other options to address emissions reduction rather than a carbon tax, for example subsidy for renewable energy and clean technology (Pol-02).

The total number of members of parliament in Indonesia in the 2014–2019 period was 560 members, with 52.3% or 293 members, being business elites (Indonesia Corruption Watch 2015). There are no barriers to businesspeople becoming members of parliament. However, the business activities of a member of parliament often create a conflict of interest with their official duties. There is no consensual definition of conflicts of interest in Indonesia. The Guidebook of Conflicts of Interest, by the Corruption Eradication Commission (an Indonesian institute), defined a conflict of interest as a situation in which a public official has personal interests which affect the standard and quality of their performance (Komisi Pemberantasan Korupsi 2009).

As the interviewees explained, even though members of parliament are aware of the importance of addressing climate change issues, when they are confronted with a carbon tax proposal, they will likely block it. This is because a carbon tax would not benefit their business interests. Many members of parliament are carbon-intensive business players, ranging from coal, cement, oil, textiles, and steel. Introducing a carbon tax would place additional costs on their business processes, even though in the

end, the costs could be passed onto the consumer. As echoed by Hsu (2012), even though a carbon tax is the most transparent climate policy, it also seems that such a tax is politically unfeasible.

## **Conclusion**

Introducing a carbon tax in Indonesia presents political challenges which need to be addressed by the government. In order to understand these challenges, in-depth interviews with key Indonesian stakeholders were carried out and analysed. This approach has found political challenges as one of the key factors that make the Government of Indonesia difficult to introduce a carbon tax.

Indonesian stakeholders believe that a carbon tax will face political challenges because of the involvement of business stakeholders in the political process. Given the fact that many members of parliament are business actors, introducing a carbon tax will also face political opposition from members of parliament, especially those who have business background. Political scepticism is another political challenge because politicians tend to 'wait and see', depending on the perceptions of the public in relation to a carbon tax. However, there is an opportunity for political support if the government can earmark tax revenues for their constituents.

Understanding the challenges will open a pathway for seeing how the introduction of a carbon tax could be successful during the policymaking process. The study has found that introducing a carbon tax in Indonesia presents significant challenges. However, there are options available for Indonesia to introduce a carbon tax despite the aforementioned barriers. Therefore, the study puts forward the following policy recommendations for the Indonesian government:

1. While the introduction of a carbon tax might not be possible in the short-term, the government should inform the stakeholders across agencies about the importance of having a clear and efficient policy to address climate change. The government must have a commitment to pay attention and prioritise climate change issues in the national policy agenda and implement these within domestic policy, plans, and institutions. Climate policies should be mainstreamed in the national development plans.
2. It is recommended that the government considers introducing complementary policies along with the introduction of a carbon tax. This is important for reducing the negative impacts of a carbon tax on business activities which will lead to reducing the opposition of business stakeholders.



3. The government must improve its accountability and transparency. The lack of transparency and accountability will erode policy enforcement and reduce public trust in the government. The government must convince the public that they are serious about addressing corruption and building public confidence. Building public trust and confidence is a crucial step that should be undertaken before the government introduces a carbon tax. A lack of public trust will lead to reduced policy effectiveness and compliance.
4. The government must ensure that the revenue generated from a carbon tax will be used to address climate-related programs which align with the national emissions reduction target.

This study has made an important contribution to understanding the challenges and opportunities for introducing a carbon tax in Indonesia. It has also contributed to understanding which factors are associated with an effective policymaking process to develop a carbon tax in Indonesia. However, there is a need for further study beyond the scope and aims of this research. Further research is necessary to modify or extend the findings of the study.

First, this study uses in-depth interviews with key Indonesian stakeholders who are members of the elites. This approach has contributed substantially to the simplicity of the method for analysing such broad subject matter. Further research needs to be undertaken to analyse the public acceptability of a proposed carbon tax in Indonesia, by conducting wide-ranging surveys or focus group discussions on issues not covered by this research.

Second, an important issue for further research relates to the design of policy alternatives. This study has analysed the challenges involved in the introduction of a carbon tax in Indonesia. One of the key challenges is that a carbon tax presents distributional impacts for business stakeholders and households. To address the potential negative impacts on households and businesses, further research needs to be undertaken to investigate the best policy designs and mechanisms to address these negative effects. There are other aspects that also need further study such as the interactions between a carbon tax and other climate policies. Further investigation is also needed to analyse the uncertainty involved in a carbon tax. The answers to these questions require more research than have been presented within the scope of this thesis.

Researching the challenges involved in the introduction of a carbon tax as a climate mitigation policy for Indonesia has been the main objective of this study. The research, having been completed at this stage, opens up opportunities for future study in many other areas. The findings of this research can be

further extended to accomplish the ultimate goal of mitigating global climate change issues. Future research that explores the same topic is expected to add to the robustness of the findings and conclusions drawn in this thesis.

### **Limitations of the study**

There are a number of limitations associated with this study. First, the study analyses the political challenges of the introduction of a carbon tax in Indonesia. It is beyond the scope of this study to develop a detailed carbon tax design. Therefore, it is clear that to be ready for implementation, future research about a carbon tax design analysis in Indonesia is required. Second, the study only focuses on exploring a carbon tax as a climate policy option for Indonesia. There are other climate policy alternatives for reducing GHG emissions such as command and control regulations, cap and trade programs, and government subsidies. Focusing on a carbon tax as a policy option does not necessarily mean that a carbon tax is better than other climate policy options. However, the detailed analysis of other policy alternatives is not within the scope of this study. Finally, this study has time, financial, and administrative constraints. It is also acknowledged that economic conditions and environment change, as do people's perceptions. However, despite these constraints, the significance of this research remains solid. The limitation mentioned here provides a space for future research.

**Acknowledgements** The author would like to thank Assoc. Prof. Cassandra Star and Assoc. Prof. Rodrigo Praino at Flinders University, Adelaide, Australia for their valuable insights and contributions to the study. The author also wishes to express gratitude to the Fiscal Policy Agency, Ministry of Finance of the Republic of Indonesia for providing facilities and providing funding that has made this research endeavour possible.

### **Compliance with ethical standards**

**Ethical approval** All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee (name of committee: Andrea Fiegert, Rae Tyler, and Peter Wigley; reference number: 7347) and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

### **References**

Aldy JE, Stavins RN (2012) The promise and problems of pricing carbon: theory and experience

- Andersen MS (1994) *Governance by green taxes: making pollution prevention pay*. Manchester University Press, Manchester
- Andrew J, Kaidonis MA, Andrew B (2010) Carbon tax: challenging neoliberal solutions to climate change. *Crit Perspect Account* 21(7):611–618
- Bali AS, Capano G, Ramesh M (2019) Anticipating and designing for policy effectiveness. *Policy Soc* 38(1):1–13
- BAPPENAS (2015) *Dokumen Pendukung Penyusunan INDC*
- Baranzini A, Goldemberg J, Speck S (2000) A future for carbon taxes. *Ecol Econ* 32(3):395–412
- Baranzini A, Van den Bergh JC, Carattini S, Howarth RB, Padilla E, Roca J (2017) Carbon pricing in climate policy: seven reasons, complementary instruments, and political economy considerations. *Wiley Interdiscip Rev Clim Change* 8(4):462–472
- Baumol WJ (1972) On taxation and the control of externalities. *Am Econ Rev* 62(3):307–322
- Baumol WJ, Oates WE (1971) The use of standards and prices for protection of the environment. In: *The economics of environment*. New York: Springer
- Baylis K, Fullerton D, Karney DH (2013) Leakage, welfare, and costeffectiveness of carbon policy. *Am Econ Rev* 103(3):332–337
- Böhringer C, Rutherford TF (1997) Carbon taxes with exemptions in an open economy: a general equilibrium analysis of the german tax initiative. *J Environ Econ Manag* 32(2):189–203
- Burnham P, Lutz KG, Grant W, Layton-Henry Z (2008) *Research methods in politics*. Macmillan International Higher Education, London
- Charmaz K (2014) *Constructing grounded theory*, 2nd edn. SAGE Publications, London
- Cherry TL, Kallbekken S, Kroll S (2012) The acceptability of efficiency-enhancing environmental taxes, subsidies and regulation: an experimental investigation. *Environ Sci Policy* 16:90–96
- Chiroleu-Assouline M, Fodha M (2014) From regressive pollution taxes to progressive environmental tax reforms. *Eur Econ Rev* 69(C):126–142
- Clapp J, Meckling J (2013) Business as a global actor. *The Handbook of global climate and environmental policy*, pp 286–303
- Cleetus R (2011) Finding common ground in the debate between carbon tax and cap-and-trade policies. *Bull Atom Sci* 67(1):19–27
- Cohen L, Manion L, Morrison K (2011) *Research methods in education*. Routledge, London

- Creswell JW (2014) *Research design: qualitative, quantitative, and mixed methods approaches*. SAGE Publication Inc, Los Angeles
- Crowley K (2017) Up and down with climate politics 2013–2016: the repeal of carbon pricing in Australia. *Wiley Interdiscip Rev Clim Change* 8(3):e458
- Dexter LA (1970) *Elite and specialized interviewing*. Northwestern University Press, Evanston
- Downie C (2017) Business actors, political resistance, and strategies for policymakers. *Energy Policy* 108:583–592
- Downie C (2018) Ad hoc coalitions in the U.S. energy sector: case studies in the gas, oil, and coal industries. *Bus Polit* 20(4):643–668
- Dryzek JS (1995) Political and ecological communication. *Environ Polit* 4:13–30
- Falkner K (2008) *Business power and conflict in international environmental politics*. Palgrave Macmillan, New York
- Francis K, Chapman Y, Whitehead D (2016) An overview of research theory and process. In: Schneider Z, Whitehead D, LoBiondo-Wood G, Haber J (eds) *Nursing and midwifery methods and appraisal for evidence-based practice*. Elsevier Australia, Australia, pp 19–32
- Fukuoka Y (2012) Politics, business and the state in post-Soeharto Indonesia (Report). *Contemp Southeast Asia* 34(1):80
- Garnaut R, Howes S, Jotzo F, Sheehan P (2008) Emissions in the platinum age: the implications of rapid development for climate-change mitigation. *Oxf Rev Econ Policy* 24(2):377–401
- Goulder L (1995) Environmental taxation and the double dividend: a reader's guide. *Int Tax Public Finance* 2(2):157–183
- Goulder LH, Schein AR (2013) Carbon taxes versus cap and trade: a critical review. *Clim Change Econ* 4(03):1350010
- Gray WB, Metcalf GE (2017) Carbon tax competitiveness concerns: assessing a best practices carbon credit (Forum: carbon Tax Border Adjustment). *Natl Tax J* 70(2):447
- Halimanjaya A, Maulidia M (2014) *The coordination of climate finance in Indonesia*. ODI Publishing, Jakarta
- Harrison K (2010) The comparative politics of carbon taxation. *Annu Rev Law Soc Sci* 6(1):507–529
- Harvey WS (2011) Strategies for conducting elite interviews. *Qual Res* 11(4):431–441
- Heede R (2014) Tracing anthropogenic carbon dioxide and methane emissions to fossil fuel and cement producers, 1854–2010. *Clim Change* 122(1):229–241

- Hourcade JC (1993) Modelling long-run scenarios: methodology lessons from a prospective study on low CO<sub>2</sub> intensive country. *Energy Policy* 21(3):309–326
- Hsu S-L (2012) *The case for a carbon tax: Getting past our hang-ups to effective climate policy*. Island Press, New York
- Hughes L, Urpelainen J (2015) Interests, institutions, and climate policy: explaining the choice of policy instruments for the energy sector. *Environ Sci Policy* 54:52–63
- Indonesia Corruption Watch (2015) Hasil penelitian potensi konflik kepentingan anggota DPR 2014-2019. Indonesia Corruption Watch, Jakarta
- Jenkins JD, Karplus VJ (2017) *Carbon pricing under political constraints: insights for accelerating clean energy transitions*. Oxford University Press, Oxford
- Jotzo F (2012) Can Indonesia lead on climate change?'. In: Reid AD (ed) *Indonesia rising: the Repositioning of Asia's third Giant*. ISEAS, Singapore
- Kallbekken S, Aasen M (2010) The demand for earmarking: results from a focus group study. *Ecol Econ* 69(11):2183–2190
- Kingdon JW (2011) *Agendas, alternatives, and public policies* (Updated, 2nd edn. Longman, Boston
- Knox-Hayes J (2012) Negotiating climate legislation: policy path dependence and coalition stabilization. *Regul Gov* 6(4):545–567
- Komisi Pemberantasan Korupsi (2009) *Konflik Kepentingan*. Komisi Pemberantasan Korupsi, Jakarta
- Leiserowitz A, Maibach E, Roser-Renouf C, Feinberg G, Howe P (2013) *Climate change in the American mind: Americans' global warming beliefs and attitudes in April, 2013*. Yale Project on Climate Change Communication, New Haven
- Liu X (2018) Interviewing elites: methodological issues confronting a novice. *Int J Qual Methods* 17(1):1–9
- Lo A (2013) The political economy of carbon tax: international practice and the Australian model. *Chin J Urban Environ Stud* 1(01):1350007
- Mankiw NG (2009) Smart taxes: an open invitation to join the pigou club. *Eastern Econ J* 35(1):14–23
- Mehling M, Tvinnereim E (2018) Carbon pricing and the 1.5 C target: near-term decarbonisation and the importance of an instrument mix. *Carbon Clim Law Rev CCLR* 12(1):50–61
- Metcalf GE (2009) Designing a carbon tax to reduce US greenhouse gas emissions. *Rev Environ Econ Policy* 3(1):63–83

- Mete P, Dick C, Moerman L (2010) Creating institutional meaning: accounting and taxation law perspectives of carbon permits. *Crit Perspect Account* 21(7):619–630
- Ministry of Environment and Forestry (2019) Laporan Inventarisasi Gas Rumah Kaca (GRK) dan Monitoring. Pelaporan, Verifikasi (MPV) Tahun, p 2018
- Ministry of Finance (2009a) Ministry of finance green paper: economic and fiscal policy strategies for climate change mitigation in Indonesia. Ministry of Finance, Jakarta
- Ministry of Finance (2009b) Green paper: economic and fiscal policy strategies for climate change mitigation in Indonesia. Ministry of Finance, Jakarta
- Morris A (2016) 11 Essential questions for designing a policy to price carbon. <https://www.brookings.edu/research/11-essential-questions-for-designing-a-policy-to-price-carbon>. Accessed 8 June 2018
- Nurdianto D, Resosudarmo B (2016) The economy-wide impact of a uniform carbon tax in ASEAN. *J Southeast Asian Econ* 33(1):1–22
- Page SE, Siegert F, Rieley JO, Boehm HV, Jaya A, Limin S (2002) The amount of carbon released from peat and forest fires in Indonesia during 1997. *Nature* 420:61–65
- Parry IWH, Bento A (2002) Estimating the welfare effect of congestion taxes: the critical importance of other distortions within the transport system. *J Urban Econ* 51(2):339–365
- Patton MQ (2015) *Qualitative research & evaluation methods: integrating theory and practice*. SAGE, Thousand Oaks
- Poterba J (1991) Tax policy to combat global warming: on designing a carbon tax. NBER working paper series, 3649
- Robert KY (2011) *Qualitative research from start to finish*. The Guilford, New York
- Rozenberg J, Hallegatte S, Perrissin-Fabert B, Hourcade J-C (2012) Funding low-carbon investments in the absence of a carbon tax. *Clim Policy* 13(1):1–8
- Skovgaard J, Ferrari S, Knaggard A (2019) Mapping and clustering the adoption of carbon pricing policies: what policies price carbon and why? *Clim Policy* 19(9):1173–1185
- Steg L, Dreijerink L, Abrahamse W (2006) Why are energy policies acceptable and effective? *Environ Behav* 38(1):92–111

- Stern N (2008) The economics of climate change. *Am Econ Rev* 98(2):1–37
- Stern NH et al (2006) Stern review: the economics of climate change. HM Treasury, London
- Stiglitz JE, Stern N, Duan M, Edenhofer O, Giraud G, Heal G, Pangestu M (2017) Report of the high-level commission on carbon prices. Carbon Pricing Leadership Coalition, p 29
- Tienhaara K (2014) Business: corporate and industrial influence. *Handbook of global environmental politics*, pp 164–175
- Tienhaara K, Orsini A, Falkner R (2012) Global corporations. *Global Environmental Governance Reconsidered*, pp 45–67
- Tsujino Riyou, Yumoto Takakazu, Kitamura Shumpei, Djamaluddin Ibrahim, Darnaedi Dedy (2016) History of forest loss and degradation in Indonesia. *Land Use Policy* 57:335–347. <https://doi.org/10.1016/j.landusepol.2016.05.034>
- van Heerden J, Gerlagh R, Blignaut J, Horridge M, Hess S, Mabugu R, Mabugu M (2006) Searching for triple dividends in South Africa: fighting CO<sub>2</sub> pollution and poverty while promoting growth (energy-related environmental tax). *Energy J* 27(2):113
- Van Manen M (2014) *Phenomenology of practice: Meaning-giving methods in phenomenological research and writing (Developing qualitative inquiry)*. Left Coast Press Inc, Walnut Creek
- Wang Q, Hubacek K, Feng K, Wei Y-M, Liang Q-M (2016) Distributional effects of carbon taxation. *Appl Energy* 184:1123–1131
- World Resources Institute (2017) How can Indonesia achieve its climate change mitigation goal? An analysis of potential emissions reductions from energy and land-use policies
- Yusuf AA, Ramayandi A (2010) Reducing fuel subsidy or taxing carbon? Comparing the two instruments from the economy, environment, and equity perspectives for Indonesia. *Econ Finance Indones* 58(1):115–129
- Yusuf A, Resosudarmo B (2015) On the distributional impact of a carbon tax in developing countries: the case of Indonesia. *Off J Soc Environ Econ Policy Stud* 17(1):131–156