

Social and political opposition to energy pricing reforms

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Abstract

Fossil fuel subsidy reforms (FFSRs) are critical to sustainable development goals. Fuel subsidies sap governments of funds and contribute to environmental degradation. However, progress on their reduction has been mixed, in part due to weak political and social support for higher prices. Energy affordability has recently shot up the agenda, following a period of sustained energy and broader price inflation, contributing to a resurgence of strikes and other expressions of social grievance. Drawing on empirical experiences across a diverse set of countries—including Chile, France, Indonesia, Iran and Ghana—this paper explores factors shaping the societal and political acceptability of FFSRs. It shows that such measures should be better adapted to the unique political, social and economic fabric of a given reforming country or locality. It builds on insights from a small literature on political and social factors shaping FFSR outcome, which emphasise greater risks of social resistance in countries with weak institutions, lower income levels and a history of political instability. It finds that a key element for the success of policy reforms in this area is the ability of policy makers to maintain a broader balance among social, political and industrial interests, regardless of the stage of economic and institutional development.

Keywords

Fossil Fuel Subsidy Reforms; Carbon Pricing; Energy Prices; Sustainable Energy Policy for Development; Social Uprisings.

1. Introduction

Fossil fuel subsidies are a major obstacle to development in many countries, as they divert significant resources away from spending on essential public services. They also contribute to environmental degradation, such as reduced air quality, which is a major cause of human ill health, particularly in developing countries (Kumar and Viswanathan, 2013), as well as helping to sustain high levels of greenhouse gas (GHG) emissions (GSI, 2019)².

2) Air pollution alone is currently estimated to cause 4.2 million premature deaths globally each year, 90 percent of which are in developing countries (Campbell-Lendrum and Prüss-Ustün, 2019; World Health Organization, 2018).

Fossil fuel subsidy reform (FFSR) is widely seen as an effective and economical way of unlocking these development benefits. In the case of climate change mitigation, for example, carbon pricing—a logical extension of FFSR—is a desirable source of untapped public funds and a lower cost means of reducing emissions compared to alternative environmental policies, such as subsidies for clean technologies (IMF, 2019a; Jones et al., 2013; de Melo et al., 2021).

Despite the strength of these arguments, however, progress on FFSR has been rather mixed in practice: subsidies to fossil fuel consumers, for example, fell consistently between 2013 and 2016 (and again during the downswing in prices during 2019/20) (International Energy Agency (IEA), 2021). However, support levels have since sky-rocketed: governments (mainly in advanced countries), for example, have spent over US\$500 billion to shield consumers from the impacts of the latest price spikes which followed the relaxation of Covid-19 restrictions in many countries and the subsequent conflict in Ukraine (IEA, 2022)³.

This uneven reform pathway reflects a wide range of challenges associated with FFSR, including distributional and welfare issues (Jones and Keen, 2011; Jones et al, 2013; IMF, 2019a; UNDP, 2019), and often deep-rooted social and political demands and constraints. Moreover, these issues are set to grow in importance, not least as governments increasingly grapple with overlapping priorities relating to containing energy prices, as well as ensuring reliable and sufficiently low carbon sources of energy supplies. In the last few years alone, popular uprisings in Kazakhstan, Chile, France and Iran have highlighted the difficulty of reconciling this multiplicity of energy, environment and social policy objectives (Carratini et al., 2018; Carratini et al., 2019; Natalini et al., 2020).

Research to date has principally focused on FFSR from economic perspectives, including the macroeconomic impacts of subsidies (Beaton et al., 2013; Clements et al., 2013), their implications for consumer welfare (Del Granado et al., 2012; Clements et al., 2013; Grottera et al., 2017), or broader environmental conditions (GSI, 2009; Mundaca, 2017; Schwanitz et al., 2014). These

Removing fossil fuel subsidies was found to potentially reduce emissions by an average of 6.4 percent by 2025 compared to business as usual across a sample of 26 developing countries (GSI, 2019).

3) An additional \$70-100 billion/ year in subsidies are allocated to fossil fuel producers globally (GSI, 2009). Over 40 countries undertaking some form of reform between 2015 and 2017 (Zinecker et al., 2018)

studies commonly point to the high fiscal costs, disproportionate benefits to the highest income groups, and resultant distortions in resource usage as fundamental rationale for reform.

By contrast, a rather scanty body of research focuses on the political, institutional and social challenges associated with FFSR (Victor, 2009; Vorster et al., 2011; Strand, 2013; van Asselt and Skovgaard, 2016; Krane, 2016; Rentschler and Bazilian, 2017a, b; Sovacool, 2017; Raymond, 2019; Natalini et al., 2020). Among the core insights from this literature is that such reforms are most likely to encounter social resistance in countries with weak institutions, lower income levels and a history of political instability (Natalini et al., 2020; Rentschler and Bazilian, 2017a; Strand, 2013). However, in reality, pressures to subsidise energy, together with social protests to FFSR, have been observed across countries with very different economic, institutional and social characteristics. These span advanced industrial powers with established social democratic traditions such as France, mid- or upper-middle income economies like Iran and Chile, as well as rapidly developing economies in Asia and Africa, including Indonesia and Ghana.

Reflecting these facts, this paper seeks to better understand the broad range of drivers of, and barriers to, FFSR within a causal framework. This is intended to inform detailed decisions regarding how to design FFSR in ways that, not only induce equitable distributional impacts across income groups and industrial sectors, but are also adapted to the unique political, social and economic fabric of a given reforming country or locality, with a view to ensure more sustainable implementation.

It approaches the problem through a comparative case study of five countries—Iran, Indonesia, Chile, France and Ghana—that have recently undertaken energy pricing reforms. This is designed to enable an understanding of how different approaches may be suitable across different socio-economic contexts. As such, the adopted sample reflects the fact that each country i) has adopted different approaches to FFSR, while revealing both similarities and differences in terms of reactions across social classes and industries; and ii) observes sharp differences in terms of: industrial development and specialisations; socio-economic inequalities and policy responses; energy policy priorities and public services; and, geographical factors and urbanization patterns.

In addition to broad support for many of the conclusions on best practices in FFSR implementation drawn from the existing economic and policy literature⁴, this paper finds that a key element for success or failure of policy reforms rests on the suitability of the policy approach to the specific socio-economic context (which may require specific interpretations and adaptations of these broad principles), and, more broadly, on the related ability of policy makers to maintain a balance among the social and industrial interests within a country.

If FFSRs themselves disrupt this balance, or if the impacts of prior political and economic reforms have fostered particular fragilities, there are increased risks of adverse social reactions. Importantly, this may occur even in some of the world's wealthiest countries such as France, with strong and stable institutions and comparatively low exposure to energy price volatility. Moreover, this paper finds that such imbalances can result, not only from country-specific factors, but also global trends. Across the sample of countries analysed, for example, we find that protests often originated among social groups that had been negatively impacted by broader structural trends such as globalization as well as domestic liberalization and privatization policies⁵.

The paper is structured as follows. Section 2 outlines the research methodology. Section 3 summarises the case study analysis, detailing approaches to energy pricing reforms and their impact on political economy interests across the countries selected. Section 4 compares experiences across the cases and provides policy suggestions on the implementation of energy pricing reforms in a way which avoids political or public opposition which derails the reform process. Section 5 brings the paper to a close and draws high level policy conclusions.

4) Commonly identified reform steps and guiding principles include: i) defining and measuring the scale of pre-reform subsidies; ii) conducting a technical analysis of the impacts of energy price subsidies and their reform (considering appropriate options for the active deployment of additional fiscal space); iii), a gradual, sequenced approach to reform implementation that is adapted to the commodity price cycle; and, iv), supported by appropriate communication strategies to help citizens and stakeholders understand and adapt to any changes (WBG, 2017).

5) On the effects of liberalization policies on the economy and society, see Cardinale (2019a; 2019b; 2021; 2022).

2. Methodology: the case study approach

Drawing on relevant methodological literature (Collier, 1993; Dion, 2003; Flick, 2006; Yin, 2009), we undertake multiple case studies in order to analyse and validate hypotheses relating to the drivers of FFSR outcomes across multiple dimensions, in particular linking specific policy design choices with broader factors shaping the socio-economic context. Following Yin (2009), our case study selection is designed to offer the widest possible range of differences in the way policies were adopted in diversified contexts, in order to support generalizable conclusions regarding the drivers and enablers of more effective pricing reform worldwide.

Specifically, our case study sample—comprising Iran, Indonesia, France, Chile and Ghana—was selected according to three broad criteria: first, the extent of fossil fuel subsidy or broader carbon tax reforms; second, the occurrence of significant societal opposition, including violent fuel riots and social protests; and, third, considerations of spatial and economic representativeness (countries from Asia-Pacific, Middle East, America, Europe, and Sub-Saharan Africa are included, which broadly reflect the range of socioeconomic, industrial and institutional contexts worldwide).

Building on this framework, a preliminary country selection was undertaken—drawing on data by Natalini et al. (2020) which classifies fuel riots across countries for the period 2005-2016—to obtain a preliminary list of 34 candidate countries, spanning each region within the global economy. The most representative country case study within each regional grouping was subsequently identified, drawing on two further criteria, in particular: (i) the extent of reforms, and (ii) the severity of riots or social protests.

The first of these criteria was evaluated using the IEA's Fossil Fuel Subsidies Database which pointed to Iran, Indonesia and Ghana as having witnessed the largest fuel subsidy reduction in their respective world regions. For the more industrialized economic contexts of Europe and America, in which the application of carbon taxes was the main cause of riots, we consulted The World Bank Carbon Pricing Dashboard, which showed that Chile and France were among the countries with the most ambitious carbon pricing reform programs.

The second criteria was applied using information provided by the International Crisis Group Database, which provides qualitative reports on different types of riots, including those relating to carbon and fuel reforms. These enabled a comparison of the severity of the societal responses (in terms of the extent of violence and the length of protests) to particular energy pricing reforms across countries in the sample; and provided evidence of any changes in these responses over time (with particular reference to the periods 2005-2016 and 2017-2022).⁶ Table 1 provides a visual representation of the criteria adopted in the selection process.

Table 1: Selection among 34 countries where FFSR and carbon pricing led to riots

	Asia-Pacific	North Africa & Middle East	Sub-Saharan Africa	America	Europe
Fuel subsidy riots (2005-2016)	China, Indonesia, India, Sri Lanka, Myanmar, Nepal, Thailand	Iran, Iraq, Jordan, Pakistan, Yemen, Egypt, Libya	Cameroon, Ghana, Guinea, Mozambique, Malawi, Nigeria, Sudan, Chad, Uganda, Zambia	Colombia, Haiti, Venezuela	
Carbon tax riots (2005-2016)				Canada, Chile	France, Spain, Greece, Italy, Portugal
Extent of reforms/magnitude of riots (2005-2022)	Indonesia	Iran	Ghana	Chile	France

Sources: Natalini et al. (2020); The World Bank Carbon Pricing Dashboard; International Crisis Group

This approach thus provides a robust framework to support the validity of our main findings, namely that FFSRs are most likely to be successful if they are properly adapted to the political and

6) Our case study selection also follows Dion (2003) in analysing observed differences in policy design choices in countries that have all reformed energy prices and experienced resultant social uprisings.

socio-economic context in the reforming country or locality; and, in so doing, successfully maintain a balance among the socio-economic interests of a country regardless of the economic and institutional stages of development. This is in marked contrast to a wider literature which typically identifies the success or failure of FFSR as primarily dependent on general considerations of policy design and the degree of economic and institutional development.

To analyse the typology and design of FFSR, the paper explores the: (i) timing and intensity of reform; (ii) incidence of the measures across different socio-economic groups; (iii) revenue obtained by the government and compensations for affected groups; and (iv) effectiveness of government communication and stakeholders' engagement. To understand the political economy contexts in which FFSRs are introduced, the paper explores the implications of the: (i) specificities of the energy sector (ii) influence of social, industrial and political groups on policymaking; and (iii) impact of the broader economic context and long-term economic policies on specific groups. These two dimensions are then brought together into a discussion section, to suggest practical ways to overcome current constraints to carbon pricing.

3. Case studies on recent energy pricing reforms

3.1. Long-lasting dependence on fuel subsidies and the trap of international sanctions: The case of Iran

Iran has been one of the largest providers of fuel subsidies in the world for decades. Every year, the government spends around \$100 billion to decrease prices of energy and other primary goods such as food and medicines, of which \$45 billion are allocated to fuel alone, leading to the lowest prices in the region (Fallahi, 2019). These policies have imposed substantial fiscal and balance of payment pressures on the country, which have periodically acted as a catalyst for FFSR. They have also contributed to a deficit in oil refining capacity, and the consequential need to import expensive gasoline for a population that relies heavily on private transportation (despite it being one of the world largest producer and exporter of oil and gas).

Energy and fuel subsidies were introduced in the 1980s to mitigate the adverse economic conditions associated with the Iraq-Iran war and remained in place after the conflict ended. Starting

from the 1990s, various governments have attempted to reduce them. However, these were often unsuccessful, in part due to opposition from rival political factions and the intensity of the attempted reforms (initiated often under extreme balance of payments pressures). The first serious attempt to reduce subsidies was carried out by Ahmadinejad's administration in 2010, in which he initially succeeded in creating parliamentary support for reform.

These reforms resulted in a drastic cut in energy subsidy costs amounting to around US\$50–US\$60 billion annually, in which the price of gasoline, diesel and natural increased fourfold, ninefold, and eightfold respectively. To mitigate the adverse effects on transportation and heating costs, US\$25–US\$30 billion were redistributed to the Iranian population in the following year through bank deposits, while the remaining share was allocated to investments in energy efficiency and to the government budget.

Thanks to these generous revenue redistribution measures, the plan faced only limited social opposition, despite the scale and aggressive pace of price reforms. However, critics among rival political factions pointed to inefficiencies in their implementation, including weak administration of the eligibility criteria for cash transfers (which resulted in 90% of the population qualifying for receipt). In 2012, the government decided to halt the reforms and avoid further increases in energy prices in an effort to defray economic pressures on the domestic population arising from renewed international sanctions (Guillaume et al., 2011; Taghavi, 2010).

Reform efforts were subsequently reinvigorated in 2014 under Rouhani's administration, which increased fuel prices by 75%. In 2016, with international oil prices under pressure from expanded OPEC production and falling imports by the United States, the authorities took the decision to cut cash transfers to households to almost a third of the Iranian population (24 out of 79.5 million). A subsequent decision to increase fuel prices between 50% and 200% in 2019 led to unprecedented country-wide protests in several major cities and provincial towns (Reuters, 2019).

This outbreak can be explained by the convergence of a number of different factors, including the design of the policy and the complex political economy of the country. In terms of the former, the cash transfer schemes launched under both Ahmadinejad's and Rouhani's suffered from a lack of public credibility: for example, access to the gasoline card used to enable poor consumers to pay

lower prices was determined using self-reported survey data. FFSRs also suffered from communication issues. For example, the 2019 reform plan envisaged that 60 of the country's 82 million inhabitants would receive a monthly bonus to compensate for higher petrol prices. Critically, however, these details were not communicated to the public in a timely way.

Political economy issues also played a major role in FFSR outcomes. By 2019, international sanctions were once again on the rise following the US withdrawal from the Joint Comprehensive Plan of Action. This constrained the country's access to international credit, foreign currency from oil and gas exports, and foreign technology for domestic refineries. While these constraints created significant impetus among Rouhani's government to pursue FFSR with greater determination (Bozorgmehr, 2019; Cheon et al., 2013; 2015), equally, they also increased the costs and risks of implementation, given the wider economic hardships upon the population at large.

However, a broader process of deteriorating living standards among several social classes in Iran is an important factor shaping the political economy and social acceptability of FFSR. Liberalisation and privatisation policies, which started in the 1990s, increased the exposure of domestic companies to global competition. This spurred efficiency gains through layoffs and lower salaries (Karshenas and Pesaran, 1995; Torbat, 2019), reducing the prosperity of sections of the middle-class. Privatization also caused a redistribution of monopolistic rents away from the urban middle-class, which, under State ownership, benefited from lower costs of goods and services and stable jobs. This trend increased income inequality, and created a broader base of discontented citizenry, which periodically emerges when the prices of basic goods increase.

To conclude, government efforts to escape the stranglehold of fossil energy subsidies have been constrained both by the need, and limitations in the capacity, to allocate scarce resources across different socio-economic groups. This has proved even more difficult under recurring episodes of international sanctions, which have often both catalysed reform and contributed to their cessation or reversal due to the resultant economic hardship (and associated episodes of social unrest and violence). However, with self-sufficiency in refining capacity having recently been achieved, Iran seems to have made a big leap towards the reduction or elimination of fuel subsidies, which is now paying dividends, particularly in the current context of elevated energy prices.

3.2. The case of Indonesia: a turbulent path to fuel re-pricing

Indonesia first introduced energy subsidies in the late 1940s and 1950s in an effort to accelerate industrialization following national independence. Several attempts were subsequently made during the 1960s and 1970s to reduce them, but reform efforts were generally stymied by ensuing social and political stability.

During the Asian crisis in the late 1990s, FFSR were implemented as a condition required by the IMF for emergency liquidity support, leading to an increase in the prices of kerosene, diesel and gasoline of 25%, 60% and 71%, respectively (UNDP, 2021). These reforms once again provoked large-scale protests across the country for three consecutive months, ultimately leading to the fall of Suharto's presidency after three decades.

With the jump in oil prices during the 2000s, subsidies proved unsustainable for public finances, reaching an unprecedented level of \$20 billion, equivalent to 20% of the government budget (OECD, 2019). In 2001, the prices of five major fuel products were again increased by a further 50%. However, these reforms were subsequently scaled back, and the process of formula-driven adjustments aimed at closing the gap with market prices was abandoned in 2003, following a re-emergence of social uprisings.

A turning point occurred in the mid-2000s, when the government implemented a series of price rises, while preventing widespread social unrest and a derailed reform process, in part thanks to the introduction of innovative compensation mechanisms (Beaton et al., 2013). Chief among these was the renowned *Bantuan Langsung Tunai* (BLT)—a direct cash transfer programme. First implemented alongside the October 2005 price increases, the BLT saw regular cash payments of around US\$30 to around 19 million households (World Bank, 2012). The program proved effective also in subsequent FFSR reforms in 2009 and 2013.

Two additional factors contributed to the effectiveness of BLT and broader redistributive measures. First, innovative use of technology such as “smart cards” enabled more targeted expenditure at the poorest households, limiting financial waste and dissatisfaction from eligible

beneficiaries and society at large (UNDP, 2021). Second, the government invested time and resources to organize campaigns, led by President Yudhoyono himself, to communicate the necessity of reducing subsidies as well as the scale and accessibility of compensation plans.

Political economy factors also played a decisive role in the outcome of reforms at various junctures. Initially, adverse reactions to FFSR came from several societal and economic groups, auto and motorcyclist lobbies (OECD, 2019), especially when these were coupled with broader fiscal austerity policies advised by the IMF (Bacon and Kojima, 2006a-b). This included opposition by influential vested interests, such as state-owned energy companies, which sought to preserve their social remits as well as monopolistic position in domestic fuel retailing.

Effective political manoeuvring proved essential to gather consensus around, and undermine opposition to, FFSR. In the case of early contested reforms in 2001-03, implementation was undermined by weak parliamentary majorities. By contrast, Yudhoyono's administration (2004-2014) was more successful in galvanising political support, including through effective coalition building, notably with the Golkar Party (Inchauste and Victor, 2017). In the case of the 2013 reform, opposition came only from specific groups such as the Indonesian Land Transport Operators Association, which proved easier to withstand. These reforms also proved politically easier to implement, partly due to the absence of a requirement to obtain parliamentary approval for 2013 budgetary revisions, thereby giving Yudhoyono greater administrative and political freedom to act (he was also nearing the end of his term of office and was not eligible to be re-elected and so had limited incentives to conserve political capital).

From 2015, the government implemented further reforms to fuel and power subsidies. Fuels such as gasoline were initially targeted over kerosene, as the latter is more extensively used by low-income groups. The proportion of subsidised electricity sales were also reduced with the number of beneficiaries declining from 24 to 6.5 million households between 2012-17 (GSI, 2015). However, FFSR continues to follow a turbulent path: today subsidies have reached again \$US20 billions, the level of the early 2000s, following the government's approval in May 2022 of additional \$US5 billion in an effort to contain the spike in energy prices.

To summarise, opposition to FFSR emerged mainly in periods of fiscal pressure and high global energy prices. In the absence of adverse external factors, successive Indonesian governments have attempted to keep protests under control by transferring the economic burden of reforms to less influential vested interests, limiting opposition from key political factions and interest groups, while retaining support (or tolerance) among the majority of the populace (aided by generous transfer schemes). It is also noteworthy that while the 2000s reforms were generally not well enunciated, tipping the balance towards large-scale opposition, in the 2010s, reforms started to be better designed and communicated by the government with a more inclusive approach.

3.3. Repricing energy services in unequal, politically polarised societies: the case of Chile

Energy subsidies in Chile were introduced in the first half of the 20th century, as part of a push to promote country-wide electrification. By the 1990s, the government had succeeded in reducing these substantially, while continuing to expand the power network. However, in the aftermath of the market liberalizations which followed, supply disruptions and energy price volatility became more common. In 1998-1999, for example, a severe drought led to a fall in domestic hydropower generation of up to a third (Latta and Aguayo, 2012), while in 2005 natural gas imports from Argentina were halted as it was diverted for domestic use.

While state-managed stabilization funds succeeded in mitigating the resultant energy price volatility, they could not compensate for sustained increases in international energy prices. Chilean electricity prices more than doubled from \$0.08 to \$0.2 KW/h between 2004 and 2008, for example, and further increases took place in the years following the global financial crisis (Benavides et al., 2015). Since 2014, as part of Chile's decarbonization strategy initiated by Bachelet's administration, further cost pressures resulted from a carbon tax on the country's largest power plants, which led to a further 15-20% price increase (Reuters, 2014).

In October 2019, the Panel of Public Transport Experts of Greater Santiago approved a 4% price increase on both metro and bus fares at peak hours⁷. This adjustment partly reflected the

7) Although the measure envisaged also a decrease of 30 pesos for non-peak hours within the Province of Santiago.

introduction of this carbon levy on electricity used on the delivery of public transport services. The fare increase was mainly borne by working poor in Santiago, who are economically dependent on the metro for peak time mass transportation services. In Santiago, for example, monthly commutes cost up to 14% of the Chilean minimum salary (high by regional standards).

This reform triggered strong social protests, initially in the form of coordinated ticket evasion campaign in Santiago. However, these soon escalated into wider episodes of vandalism and violent conflict with the police. The government eventually responded by declaring a state of emergency, deploying the army on the streets, and imposing strict night-time curfews (BBC, 2019). As the violence spread across other cities, the government was forced to cancel the fare increase.

Historical energy sector policies were a contributory factor to the 2019 outbreak of social protest and violence. In particular, Chile's pursuit of aggressive sector liberalization and privatization in the late 1990s and 2000s, followed, in the 2010s, by the most ambitious green policy in South America, had exposed households to more volatile prices. These reforms were notably accompanied by limited compensation measures for vulnerable groups, and, in the case of the later phase, coupled with a governmental communications strategy that was focussed primarily on environmental benefits (which, in practice, appealed to only a fraction of the population).

Of perhaps still more relevance, however, were political economy and structural factors, arising from deep-rooted economic and political polarisation within Chilean society. This originated, in part, from radical reforms in the State, industry and public services during the 1970s and 1980s, under the government of Pinochet. These exacerbated income inequality by granting monopolistic rents to domestic and foreign corporations linked to the wealthiest income group (Hojman, 1996). More recently, liberalised markets and more pervasive local impacts from globalisation increased inequality and restricted wage growth and employment opportunities among many middle- and lower-class households. Younger generations and city dwellers (particularly in Santiago) have also suffered from high levels of house price inflation, forcing extra urban migration, thereby extending commuting requirements.

As such, despite the highest average income in South America, robust economic growth and modest inflation, the country suffers from the second highest level of inequality among OECD

countries. For example, in 2017, the wealthiest 10% retained two-thirds of the country's wealth, while the poorest 50% possessed only 2.1%. This has fostered a deep distrust between wealthy liberal elites and increasingly impoverished middle and poor classes, which perceived the carbon tax, for example, as another tool to widen inequality. In June 2022, despite the boom in energy prices, the government has adopted another law that revamp the commitment on climate change while mentioning the need to balance social and economic costs.

To conclude, Chile's high economic performance could not compensate for the impact of accelerated carbon pricing reforms, in the context of liberalized energy markets and increasing international energy prices. This is especially true considering the disproportionate incidence of reforms on urban working poor, the absence of compensation measures for the most vulnerable, and policy communications which were weakly aligned with mainstream societal values and priorities. Overall, however, the social backlash reflected, to a significant degree, the culmination of decades-long economic and policy reforms that contributed to deep social inequality and political polarisation in the country.

3.4. Social unrest in advanced economies: carbon pricing in France

Ambitious carbon pricing measures were conceived in France during the 2010s as part of the government's international commitment on climate change, culminating in the 2015 Paris Agreement (underpinned by the belief that economic impacts would be moderate given the country's extensive nuclear energy capacity). Despite attempts in the early 2010s, the first carbon tax was introduced in 2014 and rose rapidly each year, until, in October 2018, this triggered nationwide protests lasted for several months, and resulting in economic paralysis and extensive damage to buildings and public infrastructure.

To understand these responses, it is necessary to explore both the specifics of policy design and the nature of the resultant social protests. Carbon tax increases were implemented rapidly: its value rose from €7 to €44 per tonne of CO₂ between 2014 and 2018 (Schubert, 2019). In addition, the tax had a compounding effect on the recovery of international fuel prices in the immediate run up

to the troubles. Moreover, in 2018 the government proposed to increase the tax further to reach €86 per tonne of CO₂ by 2022, one of the highest values in Europe.

Another policy miscalculation was the fact that the whole weight of taxation fell on oil-related products such as fuel. This meant that low-income segments of the population which heavily rely on fuel due for commuting to work from peripheral towns and suburbs were most heavily affected (NPR, 2018), while large industries that make intensive use of (low carbon, mostly nuclear generated) electricity were not. This, in part, explains the significant concentration of blue-collar workers from mid-low classes living in peripheral towns and suburbs among the Yellow Vest movement (NPR, 2018).

However, it is important to note that, while ostensibly a reaction to fuel price reforms, the Yellow Vest movement comprised a wide range of professional categories with a broader set of social grievances, including against perceived rises in inequality (Natalini et al., 2020). In particular, longstanding pressures on the livelihoods of low-skilled workers in labour-intensive sectors which result in part from an increase in competition with emerging economies, a decline in the strength of social safety nets, as well as labour market liberalisation, underpinned opposition to fuel pricing reform. For example, many protesters were drawn from transport workers and others employed outside of traditional industrial sectors, including call centres operators, who typically enjoyed lower levels of protection from labour unions.

There was also evidence in the social protests of perceived inequalities across different societal and industrial interests in relation to the design of the carbon tax reform. Specifically, road transportation was disproportionately impacted relatively to aviation, which is used by richer social groups⁸. One of the main demands by the protesters, for example, was to eliminate the subsidies on kerosene for domestic flights, which account for €3 out of the €8.5 billion of overall government subsidies on fuel⁹. Inequitable fiscal policy had also previously emerged as a central reform issue,

8) Aviation and marine fuels, as well as (since 2015) energy intensive industries, are completely exempt, while the final carbon tax for road transport was commonly as 172 per tonne of CO₂.

9) Agriculture and industry, which are well known for having powerful lobbies in France, benefited from partial or total exemptions from carbon tax implementation. In 2017, the agricultural sector, for example, received reimbursements up to 46 euros per tonne of CO₂, resulting in an effective carbon tax of ~2 euros per tonne of CO₂.

including in relation to long standing constraints on welfare spending arising from EU fiscal rules (Bauby and Varone, 2007).

To conclude, the Yellow Vests was a broad-based social protest movement triggered by an environmentally motivated fuel tax reform. It had its origins both in the perceived unfairness of the direct burden of carbon tax on low-income commuters and transport workers, but also a wider set of social grievances relating to cost-of-living pressures and imbalances in access to government support and political influence. This episode has had a lasting impact on energy policies in France: while the idea of renewed carbon pricing reform was revived in 2020, during a period of record-low energy prices, taxation of sector has remained unchanged since 2018. Notably, the government was among the first to intervene in an effort to control power prices in the current energy crisis.

3.5. Energy repricing in well-performing emerging economies: the case of Ghana

Energy subsidies in Ghana were traditionally justified by the need to mitigate energy prices for small businesses and poor households in an import dependent country. Price reforms were attempted on a series of occasions including in 2001, 2003, 2007/8 and 2011/12, in response to the increasing financial burden of subsidies. However, in each case, price reforms were suspended or diluted by the government, often in the face of (sometimes violent) resistance from civil society, trade unions and opposition politicians.

Proactive stakeholder engagement on fuel pricing issues has generally been intermittent, with price reforms commonly being implemented in response to emergency liquidity constraints. A notable early exception to this occurred in 2004 when, faced with a fiscally unsustainable subsidy regime, the government launched the “Poverty and Social Impact Analysis” for petroleum products. This in-depth study, involving universities, the government, and the national oil company, showed that petroleum subsidies benefited better-off citizens. The study was also a chance for the government to engage in a national campaign to raise awareness of the benefits of FFSR and on the compensations granted to affected groups. Although trade unions were opposed, the subsequent FFSR was generally accepted and there were no large-scale demonstrations against the price increase.

Ghana has actively pursued redistributive goals as part of energy subsidy programmes, traditionally through the cross subsidization of fuels used by poorer groups, such as kerosene and fuel for local fishing boats, at the expense of gasoline which is used by wealthier segments of society. However, this policy resulted in significant distortions, including the widespread tendency for diesel to be adulterated with kerosene. In subsequent years, and despite significant fiscal constraints, the government of Ghana has continued to utilise revenues from associated FFSR to offset the impacts on vulnerable groups. For example, in 2008 a conditional cash transfer programme was introduced linking fuel subsidy reductions to the elimination of school fees for primary and secondary education (Zinecker et al., 2018). This scheme has gradually been expanded to cover over 110,000 households by 2018. Overtime, FFSRs have increasingly helped finance broader development goals, including maintenance of road and energy infrastructure.

Despite policy design choices aimed at ameliorating social inequities and protests, political economy constraints have presented recurring issues. For example, reforms have often been linked to political cycles, with concessions either being forced by opposition parties and civil society stakeholders or becoming part of the campaign agenda of the government, as was the case in the elections of 2004, 2008 and 2012. The political influence of particular lobbies has also played a considerable role in critical phases of FFSR. In 2011, for example, fuel and energy prices were increased by about 25-30%, but exemptions were granted to premix and kerosene, intensively used by fishermen and farmers, which strongly lobbied for the exemption (Inchauste and Victor, 2017). In 2012 opposition from labour unions resulted in about a 20% reduction in proposed transport fare increases.

Financing pressures were a catalyst for reforms in 2012, and their acceleration in 2014 /15 (also enabled by a fall in international energy prices). Fiscal deficits exceeded 10% of GDP annually between 2012 and 2014 (IMF, 2015), contributing to unmet subsidies and distressed loans. The largest six public energy corporations showed high levels of indebtedness, estimated at around 11-12% of GDP (IMF, 2019b)¹⁰. Under pressure from energy distributors, lenders and the IMF (IMF, 2015), petroleum product prices were fully liberalised in July 2015, with the National Petroleum Authority relinquishing its price setting remit. Fuel subsidization levels remain low as OECD

10) A financing deficit at the Tema Oil Refinery was the catalyst for a prior round of pricing reforms in 2002/3.

estimates related expenditures amounted to <0.1 percent on GDP in 2020 (OECD, 2021). However, with the current record-high prices, the government is reintroducing tax cuts to alleviate the burden on final consumers.

To summarise, FFSR has been critically shaped by both commodity and political cycles. Despite the fact that Ghana is often considered by development specialists as an exemplar for economic policy and political reform in Africa, practical FFSR experiences reveal a number of key financial and institutional weaknesses prevalent more broadly in emerging economies. In particular, the challenge of mitigating consumer price pressures while meeting the financing needs of government and the domestic energy sector has contributed to changing political and social acceptability of reforms, with numerous examples of partial or complete reversals of reforms, particularly close to elections.

Table 2 provides a visual representation of the case study findings, summarizing the contribution of policy and political economy factors to the outcome of FFSR in each country.

Table 2: Summary of case study findings

	Policy design	Political economy	Outcome
Indonesia	<ul style="list-style-type: none"> ✓ Substantial FFSR and compensation mechanisms ✗ Inaccurate targeting of beneficiary ✓ Introduction of smart card to improve targeting of beneficiary ✓ Subsidies targeted at fuels consumed by wealthier households or by not influential/powerful lobbies ✓ Reforms usually implemented during fuel price downcycle ✓ Effective communication on compensation mechanisms 	<ul style="list-style-type: none"> ✗ Despite self-sufficiency in oil production, reliance on imports of refined oil products (e.g. fuels) ✗ Fiscal constraints: International and domestic crises in a lower-middle income country (GDP per capita PPP: US\$ 11,746) ✗ Addiction on private transport ✗ Despite industrialization, difficulty to considerably improve the socioeconomic conditions of middle and poor classes ✓ Progressive acquisition of political support to reforms 	<p>Successful FFSR, despite constraints of political economy</p>
France	<ul style="list-style-type: none"> ✗ Heavy incidence of carbon tax on fuel price, but without compensations initially ✗ Heavy incidence of carbon tax on rural and semi-urban working poor ✗ Tax interacted adversely with fuel price rebound in 2018 ✗ Insufficient communication on the benefits of reforms ✓ Recently, timing and intensity of reforms has slowed down to consider the impact of affected groups 	<ul style="list-style-type: none"> ✓ Favourable energy balance due to exports of power ✓ Highly developed economy (GDP per capita PPP: US\$ 43,500) ✗ Fiscal constraints: EU stringent rules ✗ Limited availability of alternative to private transportation among rural and semi-urban working poor ✗ Middle-class impoverishment due to extensive liberalizations and privatizations ✓ Political support to reforms by wealthier social classes 	<p>Unsuccessful FFSR reforms, despite some important advantages of political economy</p>

Iran	<ul style="list-style-type: none"> ✗ Drastic cut of subsidies ✓ Generous compensations ✗ Inaccurate targeting of beneficiary ✓ Reforms usually implemented during fuel price downcycle ✗ Subsidies were not often targeted to fuels consumed by wealthier households ✗ Not enough communication on compensation mechanisms 	<ul style="list-style-type: none"> ✗ Despite self-sufficiency in oil production, reliance on imports of refined oil products (e.g. fuels) ✗ Fiscal constraints: International sanctions in a semi-developed economy (GDP per capita PPP: US\$ 12,937) ✗ Addiction on private transport ✗ Middle-class impoverishment due to extensive liberalization and privatizations ✓ Although intermittently, large political support to reforms ✓ Recently achieved self-sufficiency in the production of fuels 	Quite unsuccessful FFSR, also due to challenging conditions of political economy
Chile	<ul style="list-style-type: none"> ✗ Increase in metro fares (linked to carbon tax) without compensation mechanisms ✗ High incidence on urban working poor as pre-reform metro fares were already high by broader regional standards ✗ Tax interacted adversely with fuel price rebound in 2018-2019 ✗ Insufficient communication on the benefits of reforms ✓ Slowdown of FFSR and broad concessions to affected groups and political demands 	<ul style="list-style-type: none"> ✗ High dependence from import of oil and other energy products ✓ Fiscal constraints mitigated by high income, developed economy (GDP per capita PPP: US\$ 27,000) ✗ High inequality (2nd highest Gini coefficient of any OECD country) exacerbate socio-economic reaction to reforms ✗ Limited availability of alternative to public transportation modes among urban and semi-urban students, and working poor ✗ Middle-class impoverishment due to extensive liberalization and privatizations ✓ Political support to reforms by wealthier social classes and some industries 	Quite unsuccessful FFSR, in a context of political economy with strengths and weaknesses

Ghana	<ul style="list-style-type: none"> ✗ Removal of subsidies in the 2000s was often followed by their restoration ✓ Cross-subsidization between gasoline and other fuels as a form of compensation ✗ Cross-subsidization proved complex to administer and caused distortions ✓ Existence of compensation schemes: cash transfer program, elimination of school fees ✓ Government surveys on energy consumption by income groups led to more accurate targeting of beneficiaries ✓ Although initially intermittent, stakeholder engagement was later intensified, and effective communication on the benefits of FFSR increased the level of acceptance within society 	<ul style="list-style-type: none"> ✓ Recently achieved self-sufficiency in oil production and refining capacity ✗ Initially, limited availability of alternative to kerosene and fuel for fishing boats by poor households and businesses ✓ World highest GDP growth and a model for developing countries on economic and policy reforms ✗ Fiscal constraints: High performing economy but among low-income developing economies (GDP per capita PPP: US\$ 5,652) ✗ Political support to reforms dependent on political cycles (e.g. lacking close to elections) 	<p>Quite successful FFSR, despite political economy challenges</p>
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✓ Successful reform/advantage of political economy

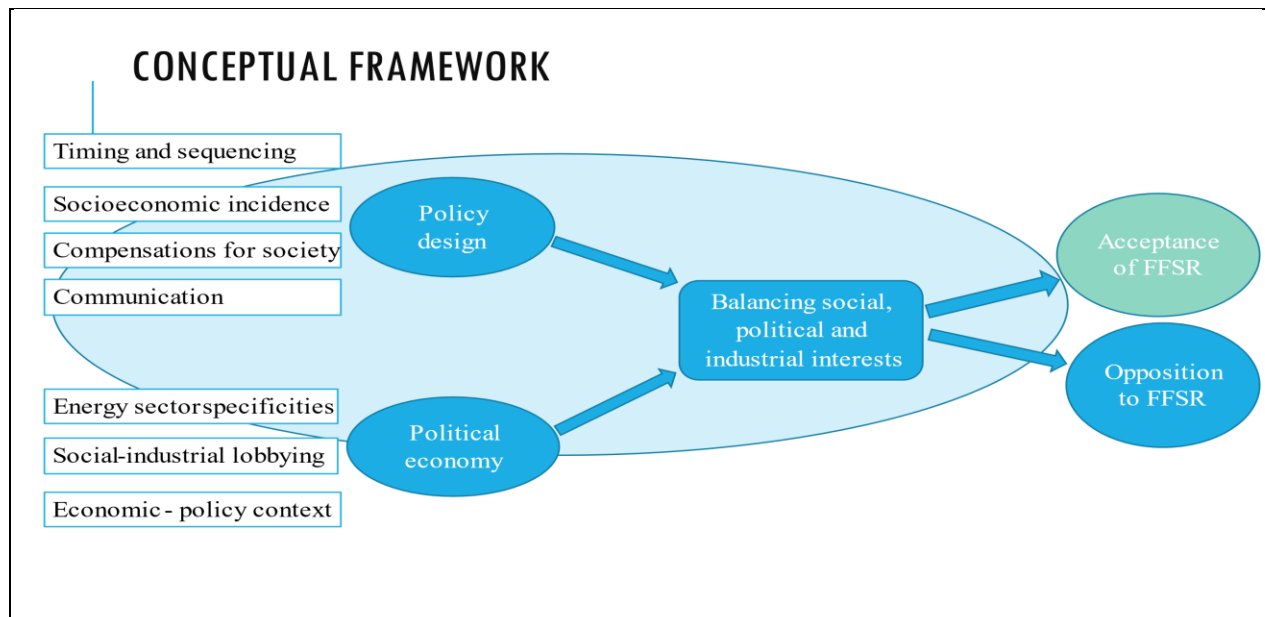
✗ Unsuccessful reform/disadvantage of political economy

4. Discussion

This case study analysis explores drivers of, and constraints on, the effectiveness of energy pricing reform in selected countries across two main dimensions: firstly, specific policy design and implementation choices; and, secondly, the political economy and broader socioeconomic context for reform. Our findings emphasise the importance of integrating both these dimensions to ensure successful pricing reform in each country. Figure 1 provides a visual representation of this conceptual framework.

To support this conclusion, and inform practical ways to overcome current political and societal constraints to energy pricing reforms, this section integrates our analysis of the role of key contextual factors around the following key dimensions of policy design and implementation: (i) the timing and intensity of reform; (ii) the incidence of the measures across different socio-economic groups; (iii) the revenue obtained by the government and compensations for affected groups; and, (iv) the effectiveness of government communication and stakeholder engagement.

Figure 1. Drivers for successful Fossil Fuel Subsidy Reform (FFSR)



i) Timing and reform intensity

The optimal timing of FFSR differs based on the trade position of a given country. For net fuel-importing countries, subsidy reform may be most feasible during commodity down cycles: Indonesia, for example, enacted a series of reforms in the years following the 2015 fall in oil prices. By contrast, in France, the tax escalator is likely to have interacted adversely with a recovery in fossil fuel prices.

A gradual approach to FFSR is generally preferable to limit disruption to households and firms. However, implementation often requires a stable economic environment: in Indonesia, Iran, and Ghana, a series of fiscal and balance of payments crises contributed to the implementation of highly disruptive price hikes, which limited the capacity of governments to phase reform implementation and the extent of complementary measures.

Nonetheless, such a technical reform prescription also requires political support and social acceptance, even in times of crisis management. This is evident from the numerous interruptions to fuel price escalators which are observed across the case studies. It follows that the intensity of reform may need to balance economic and political factors. For example, reformers may consider accelerating the pace of implementation during political windows of opportunity, particularly following strong election results.

This is evident from our case studies, including from the manner with which President Yudhoyono was able to leverage his political strength to facilitate the pace and effectiveness of FFSR in Indonesia. Beyond this, our research reveals numerous examples in which the political cycle impinged on FFSRs. These include subsidy increases in the run up to the 2004 and 2012 elections in Ghana, and the rapid reversal of the carbon tax uplift in the face of protests from the Yellow Vests by a much-weakened French President Macron in 2018.

ii) Socio-economic incidence of the reforms

Understanding the incidence of FFSRs across the whole range of social groups is key to designing targeted and politically acceptable reforms. More specifically, knowledge of how people are likely to respond to price increases is key to informing policy choices on subsidy reforms. For example, a sound understanding of distributional considerations is evidenced by the targeting for subsidy

reform in Indonesia and Ghana of gasoline, used by middle- and high-income groups, rather than kerosene, widely used by low-income groups for cooking and lighting.

By contrast, awareness of the incidence of reforms on specific socioeconomic groups, including low-income commuters, was less evident in the case of tax and ticket price reforms in France and Chile. These experiences highlight the potential for consumers to be more sensitive to reforms in cases where behavioural change is practically limited: adverse social reactions to motor fuel taxes increases in France, for example, were most evident among households in rural, semi urban and peripheral urban areas which are under served by public transport. Similarly, poor urban households impacted by higher metro prices in Santiago may be unable to afford alternative private transportation.

Critically, many of the key stakeholders for FFSR are chronically underrepresented. This created technical issues understanding reform impacts on communities with insufficient supply of networked or commercial energy sources. For example, under reporting of biomass expenditure by poor households, and barriers to understanding fuel substitution possibilities among rural and other marginalised groups, were a particular issue in reforms in Ghana and Indonesia (these groups are often relatively more exposed to unintended consequences of subsidies such as fuel smuggling, blackouts or fuel shortages (Inchauste and Victor, 2017; WBG, 2017).

However, our case studies suggest the need for a fuller understanding of inequality issues, spanning a broader set of policy and impact factors. For example, grievances regarding a lack of equitable access to economic opportunities, political influence and social recognition underlay episodes of civil unrest in Iran, Chile and France. In these cases, heightened sensitivity to FFSR was clearly rooted in the adverse impacts of wider economic and policy trends, including those relating to globalisation, product market privatisation and liberalisation, as well as rising housing costs.

iii) Compensations for affected groups

Large cash transfer and other complementary measures were integral to building political and social support during the more successful phases of FFSR in Indonesia. By contrast, expenditure adjustments were initially lacking in Chile, France, and (particularly in the case of early reforms)

Ghana, while suffering from inaccurate targeting and often delayed implementation in Iran¹¹. In each of these later cases, the authorities were ultimately pressed to offer political and economic concessions in face of social backlashes.

A range of factors influence the appropriate choice of safety net. The degree of economic dependency among many vulnerable groups favours scalable programmes with well-established delivery chains. Evidence from Indonesia, Ghana, and Iran, illustrate that designing and implementing new, large-scale social safety nets, such as cash transfer schemes, requires substantial upfront investment in institutional and technical capacity (and accompanying political commitment). The lack of available high-quality data to implement targeted eligibility criteria was a particular issue, for example, in each of these reform settings.

Political imperatives may require targeting complementary reforms, not only at groups that are vulnerable to reforms, but also those that are politically influential and well organized. This is evident from the powerful role of state-owned enterprises as well as transport workers and labour unions in Indonesia, Ghana, and France. Reforms often have the greatest political chance of success where the interests of powerful industrial lobbies can be reconciled with those of the wide populace.

This may also require political compromises, such as those forged by President Yudhoyono on Indonesia through his appointment of Golkar party leaders to key posts (and broader policy accommodations) to ensure the necessary parliamentary support for FFSR in the 2000's. This contrasted markedly with the politically uncompromising and unilateralist approaches to reform undertaken by the government of Macron in France as well as successive governments in Chile (including Bachelet's).

11) Indonesia also relied on reported data by community leaders to determine BLT eligibility which proved problematic at times. However, the somewhat arm's length nature of this process ensured fewer data issues compared to individual reporting systems employed in Iran.

iv) Communication and stakeholder engagement

Building consensus around FFSR is an important pillar for success¹². Policy communication may need to precede energy pricing reform to mitigate the risk of adverse reactions. At times, this was the case in Ghana, where a broad process of government-led stakeholder engagement accompanied the conduct of the Poverty and Social Impact Analysis of petroleum products in 2004. This helped establish the rationale for reform and communicate the positive implications of price liberalization, including the redirection of financial savings to social protection programmes.

A further insight from our case studies is the importance of communication strategies which properly reflect public priorities. Even in advanced countries with long standing policy commitments to climate change, such as France, the argument for higher motor fuel taxes as a stimulus for transition towards a lower carbon transportation sector appeared to gain limited traction with the Yellow Vest. Overall, our research suggests that many communities may be more receptive to policy communications which target local development benefits, rather than those relating to long-term climate change mitigation. Communication should also clearly demonstrate links between energy pricing reform and broader policy outcomes, including wider public expenditures on healthcare and education.

5. Conclusions and policy suggestions

Energy subsidy and broader carbon pricing reform is an increasingly critical issue following the renewed spike in energy prices, and rising priority on tackling climate change in a socially equitable way. This paper analyses energy pricing reform experiences and best practices. It finds that many of the fundamental precepts and insights underpinning an extensive economic policy reform literature are generally sound. However, our research reveals the need for greater tailoring

12) Dedicated independent bodies, including green tax commissions, composed of government, industry, academia and civil society representatives, have proved influential catalysts for energy pricing reform across a range of OECD and non-OECD countries (OECD, 2021).

of these policy prescriptions to the specific country and reform circumstances, with a particular focus on the importance of ensuring their political and social acceptability.

These issues, which have hitherto been relatively unexplored within a causal analytical framework, have pervasive implications in terms of:

- (i) adapting the timing and intensity of reform to take advantage, not only of favourable conditions in commodity price cycles, but also of political factors, such as the strength of democratic majorities in favour of reforms, as well as, where absolutely necessary, the timing of electoral cycles and political successions;
- (ii) implementing effective complementary measures to support affected groups, based on a clear assessment of winners and losers from FFSR across income groups and industrial sectors (in order to avoid widespread opposition to implementation). In particular, the extent and targeting of these measures should take account of the existence of broader inequality issues, and considerations of political and social inclusion;
- (iii) proactive communication of the pros and cons of FFSR reforms, with advance signalling (and, where possible, execution) of expenditure adjustments to complement rising energy pricing. This underlying rationale at the core of this engagement should be adapted to the priorities of individual stakeholder groups, and generally (at this current time) appears to favour an emphasis on local development benefits (rather than global climate change mitigation).

In particular, our research finds that successful FFSR rests on the ability of policy makers to maintain a broader balance among the social and industrial interests within a country. If FFSR disrupts this balance, or if the impact of prior political and economic reforms has fostered particular fragilities, there is an increased risk of adverse social reactions. Such underlying vulnerabilities may arise from a broad and interrelated set of potential drivers including, for example, political underrepresentation, weak social security nets, historical labour and product market reforms, rising cost of living, as well constraints on access to public services. Critically, such factors exist also in advanced economies such as France, with strong and stable institutions. They warrant consideration of the broad reform context, both when assessing social tolerance and license, but

also in determining the most appropriate policy mix, and potentially implying the need for wide-ranging structural and institutional reforms.

Looking ahead, it appears likely that energy and environmental policies implementation will increasingly impact broader political, social and economic issues. This is evident in the current context of high and volatile energy prices, as well as rising inequality and growing economic burden from climate change mitigation policies, affecting many countries. Many governments around the world, including in Europe, are currently navigating this challenging cocktail of factors, requiring them to make tough choices about energy pricing as well as the form and generosity of social safety nets. Proactively adapting traditional policy best practice to these evolving political, social and economic conditions has arguably never been more critical.

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