

India's LPG cooking gas subsidy reform:

Lessons for policymakers in reducing costs and building acceptance for reform

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1. Introduction

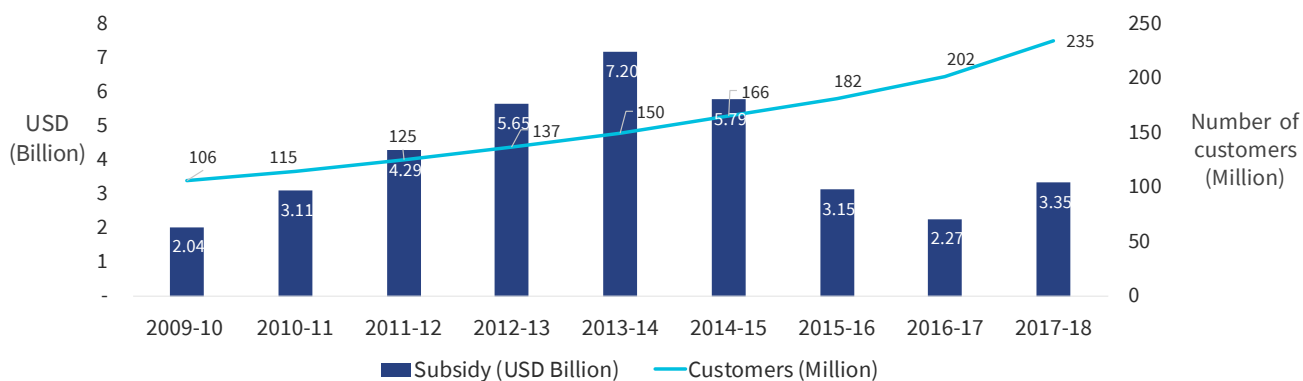
The reform of government subsidy programs saves money. Such reforms may even be popular, as seen in the case of India's LPG¹ cooking gas subsidy program. This case study looks at how paying attention to three key areas—institutional readiness, ecosystem readiness, and the usage journey of recipients—can lead to successful reform. This case study will highlight the key lessons for policymakers who

seek to reduce a government's subsidy burden in a way that is acceptable to a sensitive electorate and skeptical program administrators. The conclusion of this study provides information on how to implement a four-part reform process, highlighting questions for implementers at each stage of the reform process.

The relevance of India's LPG reform to policymakers

India's cooking gas subsidy is the largest cash-transfer program in the world, with over 250 million recipients. Over two years, from June, 2013 to June, 2015, the government transitioned this in-kind

initiative to a cash-transfer program. The reform² of the LPG subsidy system led to a significant reduction in the government's fiscal burden, despite increases in the number of beneficiaries.



The program transformed from one that offered universal benefits to a program that delivered restricted and targeted benefits. It redistributed savings to social programming for the poor. Previously, the consumer subsidy had lowered the price paid for LPG cylinders for private household use to below the market price—which created incentives for diversion for commercial use. With the removal of this market-distorting pricing, the subsidy is transferred to the bank accounts of eligible customers after they

purchase an LPG cylinder at market price.

The effectiveness of the initiative brought about a change in the initial political and popular opposition to the reform. In 2016, 72% of customers strongly agreed that the LPG reform was a good governance initiative. The implementation was not smooth or painless, but through an iterative process of adjustment to reach the final successful design, the program offers lessons for policymakers.

Pressures to reform subsidies

Subsidies⁴ are a policy measure used by governments around the world. In India, the three largest subsidy programs are for food, fuel, and fertilizer. In 2003-04, the subsidy bill was 80% of the fiscal deficit⁵. The sheer size of the subsidy bill risked jeopardizing the

macroeconomic stability of the economy. In general, subsidies are regressive—rich households benefit more than poor ones. In May, 2013, [an IMF paper](#) demonstrated that India's fuel subsidies were both badly targeted and regressive.

¹Liquid petroleum gas, in characteristic metal cylinders, is most commonly used as cooking gas.

²Subsidy reform can be defined as a policy change in the nature and effects of the existing subsidies.

⁴A government subsidy can lower the cost of production, raise the price received by producers or lower the price paid by consumers—as is typical in fuel subsidies. Subsidy reform changes the nature and effects of existing subsidies.

In 2014, the Government of India's Chief Economic Advisor highlighted the regressive nature of subsidies. The richest 20% of Indians benefited from subsidies worth USD 16 billion for six commodities and services⁶. Despite the crippling costs, India's price subsidies were not transforming the lives of the poor, and consumers had a low awareness of their existence. Indian subsidies represented an unsustainable fiscal burden and they were not delivering government policy aims.

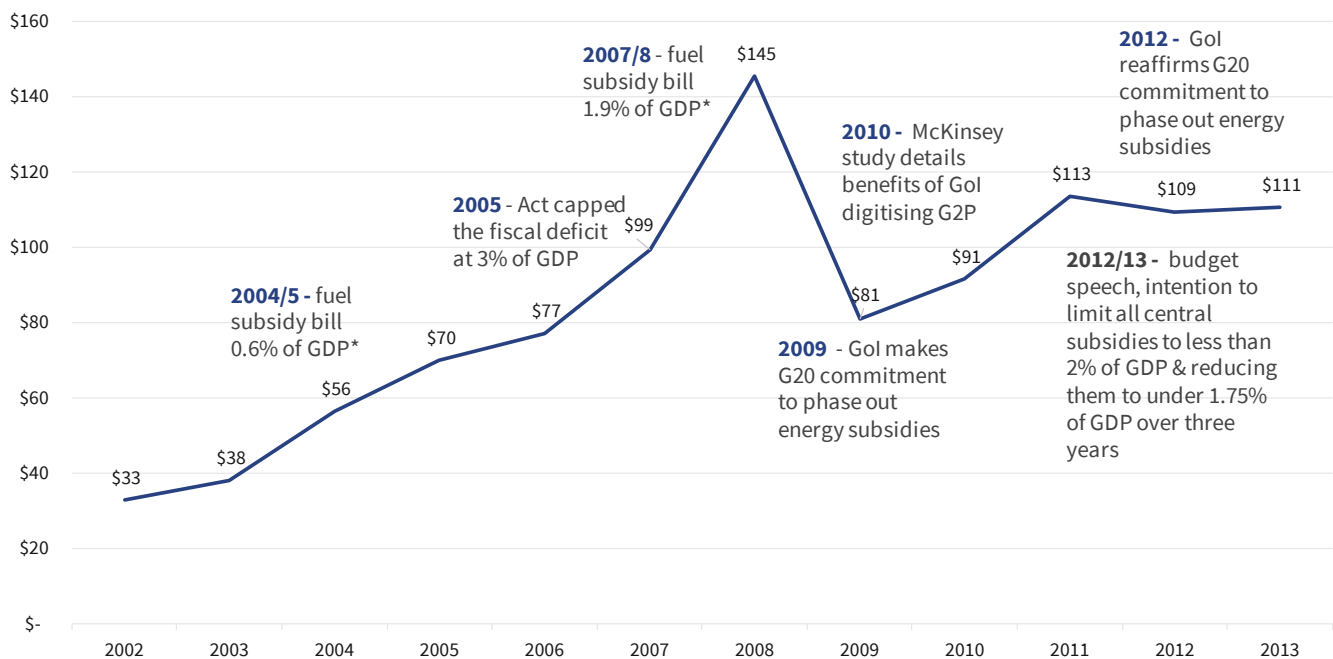
The catalysts for fuel subsidy reform in India were the rising oil price—and hence increasing subsidy burden—and international commitments to remove them. Crude oil prices peaked in 2008. At this point, the fuel subsidy bill had reached over 2% of GDP. This included subsidies for petrol, diesel, kerosene, and LPG cooking gas. Government spending on fuel subsidies continued to rise, peaking in FY 2012-

13. In 2009, the Government of India made a G20 commitment to phase out energy subsidies. This was reaffirmed in 2012. In the FY 2012-13 budget speech, the national government stated its intention to limit all subsidies to less than 2% of GDP, reducing this to 1.75% over three years. Key fuel reforms started with decontrolling petrol prices, then diesel prices, and then the reform of the LPG subsidy program⁷.

A new government came to power in May, 2014. Yet the government found that its social agenda was being frustrated. It could not spend more on social programs because the subsidy burden was overwhelming the budget. There was pressure to reduce subsidies to enable the new government to enact its election promises.

Timing: Why fuel subsidy reform started in 2012

Catalysts for reform: rising crude oil price, rising subsidy burden, international commitments



Source: Annual oil price

*Anand et al, 2013, IMF Working Paper, annual high oil price <https://www.macrotrends.net/2516/wti-crude-oil-prices-10-year-daily-chart>

Source: Annual high oil price <https://www.macrotrends.net/2516/wti-crude-oil-prices-10-year-daily-chart>. *Anand et al, 2013, IMF Working Paper.

**Energy subsidy reform: lessons and implications, Washington, D.C.: International Monetary Fund, c2013.

⁵ Kumar et al 2004, NPFR

⁶ Cooking gas, railways, power, aviation fuel, gold, and kerosene; from Economic Survey 2015-16 quoted in "Human Development Report 2016". UNDP, p. 118.

⁷ (1) Petrol was decontrolled in June 2010. (2) Price of diesel was gradually increased, 50 paise (7 cents) every month, from Jan, 2013 to Oct, 2014 and then it was fully decontrolled. (LPG reform starts).

Digitization process started with LPG subsidies

In India, the three largest subsidy programs are for food, fuel, and fertilizer. At the time that the subsidy reform agenda was gaining momentum, only the fuel subsidy for LPG cylinders had a computerized database of recipients. Due to the regressive nature of the subsidy, the LPG program had an easier beneficiary profile—most were in urban areas,

were better educated, and were more likely to own a bank account. Lastly, the LPG program was not government-implemented but relied on oil marketing companies that had a higher capacity⁸. These factors made the LPG program the easiest to reform, of the large subsidy programs.

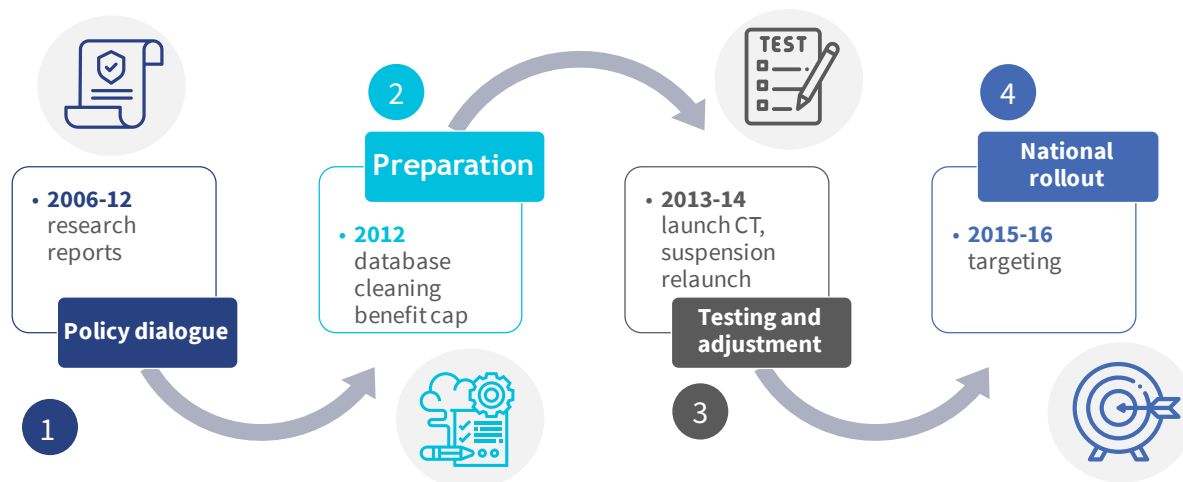
The reform process had four distinct stages and considered all stakeholders

The reform process went through four distinct stages—policy dialog, preparation, testing and adjustment, and finally national rollout. Successes and missteps in the reform process can be attributed to a consideration of, or a lack of consideration of, three areas—institutional readiness, ecosystem readiness, and recipient usage journey⁹. Institutional readiness comprises the foundational elements

related to government institutions and the mechanism that will be responsible for administering the G2P¹⁰ program. The readiness of the ecosystem concerns the pre-requisites and the network of actors required to translate plans into a well-functioning payment delivery system. Recipient journey considers the beneficiaries of the program, their profile, their capacities, and their needs.

Overview of the LPG subsidy reform process

Continued encouragement to reform provided by research showing fuel subsidies are regressive



⁸Indian Oil Corporation Ltd., Hindustan Petroleum Corporation Ltd. and Bharat Petroleum Corporation Ltd.

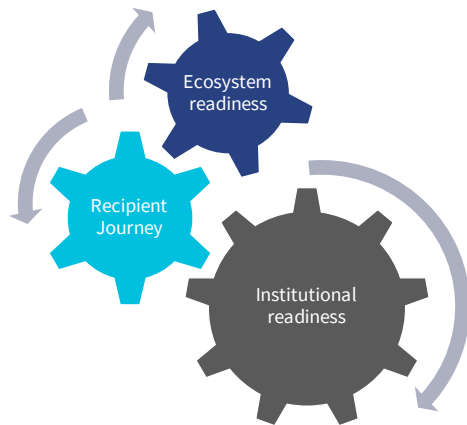
⁹G2P Digitization End to End Framework developed for BMGF, World Bank and CGAP from Pulver and Forster, 2019, “Driving Financial Inclusion Through G2P Payments”.

¹⁰Government to person indicates programs that make transfers from government to individual citizens, such as social protection programs.

G2P digitization framework used to understand the LPG subsidy reform process

Developed in 2019 for BMGF, World Bank, and CGAP

G2P digitization framework



Features of G2P Digitization Framework

- Developed to identify the components necessary for an effective transition to the digital payment of cash transfers to recipients of government program*.
- **Institutional readiness:** Foundational elements- Government policy rules and regulation, PFMS, Programme design and implementation (governance and incentives, communication and capacity building, programme systems and linkages, provider selection and account design, grievance and redress)
- **Ecosystem readiness:** National landscape including; geography physical and human, telco and power networks, national payment system, financial access points, identity systems
- **Recipient Journey:** Perspective of the people served by the government program
- Components interact during the implementation of digitization and will require adjustments in design for success

* Pulver and Forster, 2019, Driving Financial Inclusion through G2P Payments.

1.1.1 Policy dialog 2006-12

The foundation of the LPG subsidy reform process can be traced back to 2006. While external pressure was building, a national policy dialog was also underway. Special government committees and taskforces drafted a series of government reports. These helped to build consensus around the approach to fuel subsidy reform. This started in 2006 with the [Rangarajan Committee Report](#) that recommended raising the price of LPG cylinders. In 2010, the [Parikh Committee Report](#) recommended fully liberalizing LPG prices. It further recommended capping the number of cylinders and introducing a cash transfer for low-income households. In 2010, a non-governmental report produced by McKinsey highlighted large potential savings of digitizing G2P initiatives. McKinsey stated that G2P digitization could reduce the fiscal deficit by 20% and could help boost India's welfare spending by over 25%.

In 2011, the [Nilekani Task Force](#) went into specific details of the reform of the LPG program. It recommended de-duplicating the LPG database using the *Aadhaar* unique ID numbers, capping the number of LPG cylinders, and paying the subsidy directly to recipient bank accounts. In 2012, [the Kelkar Committee report](#) recommended the elimination of the LPG subsidies over three years. Top-level backing for reform came in October, 2012, when the Prime Minister constituted a National Committee on Direct Cash Transfers. This resulted in the January, 2013 announcement of the Direct Benefit Transfer program to digitize G2P payments and the launch of a coordinating unit, DBT mission, under the Planning Commission. This policy dialog supported the institutional readiness for change.

1.1.2 Preparation 2012

Once the policy direction was clear, work could begin toward implementing the reform. [Project Lakshya](#) involved cleaning and linking beneficiary customer databases, as well as introducing a customer service portal. In India, three separate oil-marketing companies distribute the LPG cylinders

to consumers, each of which had their respective customer databases. No controls were in place to prevent a single household from having multiple accounts and therefore accessing massive numbers of subsidized LPG cylinders.

Without a unique identifier, such as a national ID number, an algorithm was used to identify possible duplicates¹¹. This process identified 20 million connections for investigation through house visits. After the de-duplication, a unique 17-digit LPG customer ID was created for use across all three databases. This approach was taken due to a lack of readiness in the ecosystem, specifically, before the widespread availability of the *Aadhaar* digital ID. The first *Aadhaar* digital ID was issued in September, 2010

by the Unique Identification Authority of India.

The government then introduced the LPG customer transparency portal, which removed information asymmetries and empowered consumers. These consumers were then able to rate distributors' performance, see distributor ratings, and change their distributor. This resulted in the distributors being more responsive to customer needs.

1.1.3 Testing and adjustment 2012-16

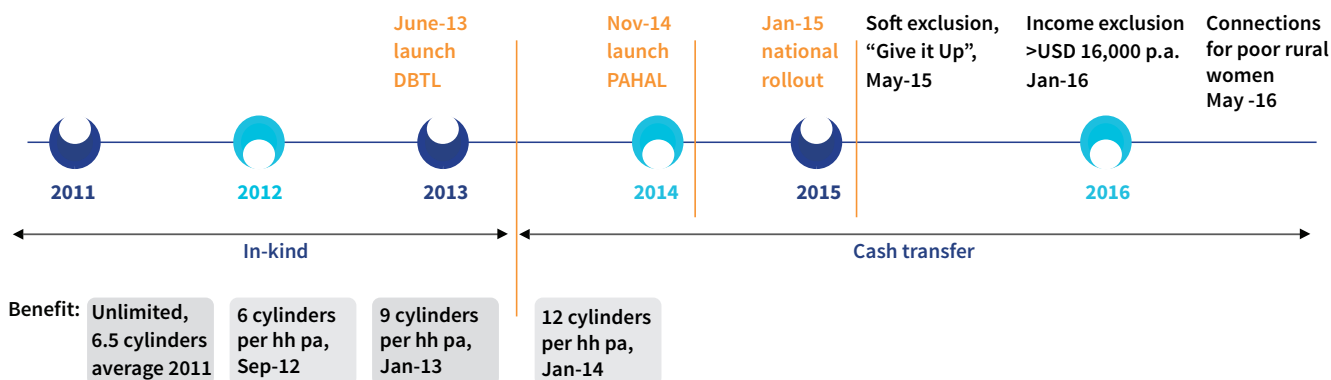
The changes in the levels of benefits within the LPG subsidy program began in 2012. A [process of design, testing, and adjustment](#) was followed and led to the program being re-launched and renamed several times. In this context, the names DBTL, modified DBTL, and PAHAL refer to different incarnations of the LPG subsidy program. The program transformed from

a universal and unlimited benefit to a capped cash transfer. The design of the program was largely set at the time of the national rollout in January, 2015. It subsequently added new program elements in 2015 and 2016 that targeted low-income households and excluded high-income households.

Design, testing and adjustment process 2012-16

From universal and unlimited benefit to targeted and capped cash transfer

Targeting: Universal



The reform started with capping the benefit level—restricting the number of cylinders per household. In 2011, the average household used six and a half cylinders per year. In September 2012, the first cap of six cylinders per household per year was introduced. Following a push back, this was raised to nine cylinders in January, 2013 and finally to 12 cylinders in January, 2014. The level was set through trial and error and in response to public opinion, in particular

the popular backlash before the May, 2014 general election.

The initial design of the cash transfer program launched as DBTL in June, 2013, focused on the government's fiscal concerns and did not fully consider the recipients' perspective or the readiness of the ecosystem.

¹¹Same name and same address, different name and same address.

Although this was intended as a national rollout, its limitations led it to be suspended. It effectively marked the start of a testing and adjustment

With the launch of DBTL, the government extended a three-month grace period to LPG consumers for the transition from the in-kind to cash transfer into bank accounts. The backlash to DBTL led to its suspension in January 2014 and a formal four-month review process was initiated to consider its successes and challenges. The modified DBTL, called PAHAL, was launched in November, 2014. The first three months of the program saw a deliberate focus on information, education, and communication. A centralized system to resolve grievances was also introduced. Customers were no longer compelled to follow rigid and inconvenient processes—instead, a more flexible choice-based approach was introduced. Customers could make payments into a bank account with or without linking to Aadhaar unique ID number. They could register at the LPG dealer or a bank and had a

phase that ended with the [national rollout of PAHAL](#) and the introduction of targeting.

choice of enrolment options—camps, online, mobile, and through call centers.

At the launch of DBTL, which included the first payment to bank accounts, consumers were required to have an Aadhaar ID number. However, less than a third of the population had one. The requirement of Aadhaar was to ensure that no “ghost” (fake) beneficiaries were introduced, yet compliance was difficult for beneficiaries. Aadhaar was only made mandatory again in December 2016, at which point over three-quarters of the population had the unique ID. During this testing and adjustment phase, the government was able to increase acceptance of the reform through researching recipient experience and responding to their needs by introducing choices.

1.1.4 National rollout 2015

The national rollout of the PAHAL LPG program commenced in January, 2015. The benefit level was now capped permanently at 12 cylinders per household per year. Payments to bank accounts did not require the use of Aadhaar numbers. As confidence in the program increased, there was a careful introduction of income exclusion and targeting of poor households.

In May 2015, the program launched a “give it up” campaign¹², which sought to encourage middle-income households to give up their subsidy voluntarily. This increased people’s awareness of the subsidy burden and raised the question of fair distribution. To increase the appeal of the programs, the government published the names of “champions” who gave up their subsidy on a scroll of honor on the LPG website and at distributors’ offices. The government also published the name of the low-income “beneficiary” households who had received a

new connection upon the “champion” giving up their subsidy. By 2016, about 10 million households had given up their subsidy voluntarily.

The next step was hard exclusion, introduced in December 2015. Those with an annual income above INR 1 million (USD 14,000) were no longer eligible to receive the LPG subsidy.

In May, 2016, following the realization of savings from the reform process, the Prime Minister was able to launch [Pradhan Mantri Ujjwala Yojana](#)¹³ (PMUY). This program redistributed the savings made from the initial reforms to enable subsidized LPG connections for low-income households. This expanded access to clean LPG cooking gas into rural areas. Encouraging poor rural households to avoid the health costs associated with the use of firewood, dung, and coal—including asthma, lung cancer, and partial blindness.

¹² <https://www.microsave.net/2015/07/27/using-behavioural-sciences-to-make-consumers-give-it-up-the-case-of-lpg-subsidy/>

¹³ https://www.microsave.net/wp-content/uploads/2018/11/Pradhan_Mantri_Ujjwala_Yojana_A_demand_side_diagnostic.pdf

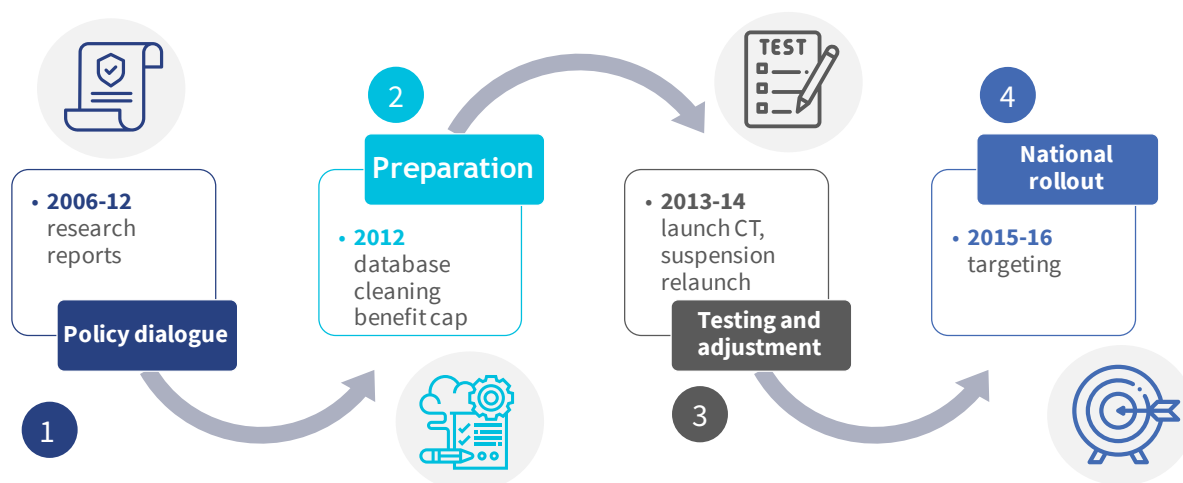
1.1.5 Summary of LPG reform process 2006-2016

The reform of the LPG subsidy program can be traced over 10 years. It started with a policy dialog involving national and international actors. Implementation of the policy recommendations started in 2012 with an initial cleaning and de-duplication of data. Adjusting the design primarily occurred during a two-year

testing phase between 2012 and 2014. Most of the design was fixed by the time of the national rollout in 2015. Yet new program elements were introduced that targeted benefits at low-income households and excluded high-income households.

Overview of LPG subsidy reform process

Continued encouragement to reform provided by research showing fuel subsidies are regressive



Applying the four-part reform process

The four-part reform process described in the case of India's LPG subsidy reform can be generalized for use in other countries. Below key questions are suggested for policymakers to answer at each stage of the four-part reform process.

Reform process	Key questions for policymakers
1. Policy dialogs	<ul style="list-style-type: none"> - Where is the best place to start subsidy reform? Which is the easiest large program to tackle first? - How regressive are the current subsidies? Who are the potential winners and losers in the reform process? - What is the level of readiness in terms of institutions and the ecosystem? What is the perspective of recipients? How should the design of the reform reflect the current situation? Is the reform design technically sound, institutionally possible, and politically acceptable? - What are the anticipated savings? What formula will be used to calculate actual savings? How will these savings be used? - What is the ideal timing of the reform?

Reform process	Key questions for policymakers
2. Preparation	<ul style="list-style-type: none"> - What information and monitoring systems are required to start the reform and monitor progress? - What coordination mechanisms would ensure different actors at all administrative levels are motivated to enact reform? <p>Is there top-level backing for the reform—PM as the champion or public figurehead?</p> <ul style="list-style-type: none"> - What is the state of stakeholder mapping and information or communication campaign?
3. Testing and adjustment	<ul style="list-style-type: none"> - What is the order of the reform? - How do we test the acceptability of the reform? - How long will the testing phase be? - How can we identify and target beneficiaries during the testing phase?
4. National rollou	<ul style="list-style-type: none"> - How can we target beneficiaries during roll-out and how to make targeting more precise? - Will there still be flexibility to adjust the program during rollout? - Will an impact evaluation be included in the rollout? - How do we ensure continued momentum for reform? Can we publish savings figures? How can all stakeholders be engaged proactively at both the supply and demand sides?

Key lessons from the case

India's reform¹⁴ of its LPG subsidy program provides policymakers with lessons on how to build acceptance for reform and on how to reduce costs.

The reform process led to a massive reduction in the LPG subsidy burden for the government. The LPG subsidy burden per customer fell by 70%, from USD 48 in 2014 to USD 14 in 2018.

A significant dividend was the result of a 46% fall in crude oil prices over the same period but the reform process still made significant savings. Estimates of total savings from reform were over USD 8 billion¹⁵. The key sources of savings were made through:



The exclusion of “ghost” beneficiaries and de-duplication, totaling 45.4 million⁶ accounts to date;



Voluntary exclusion with 10 million accounts given up;



Income exclusion of the richest households;



Prevention of diversion and leakage for commercial use, demonstrated by a 39% growth rate in commercial cylinders in FY 2015-16.

The reforms resulted in major savings, which reinforced the drive to reform subsidies. The realization of these savings was important to continue the reform efforts.

The changing design of the LPG subsidy program provides both positive and negative lessons. Introducing hard conditions too quickly and capping of number cylinders per household per year contributed to a popular backlash. This was made worse by the timing of the reform, which coincided with a general election—a more politically sensitive time. The lack of consideration of the readiness of the ecosystem and the hard requirement for digital ID when they were not widely available also undermined the popularity of the reform.

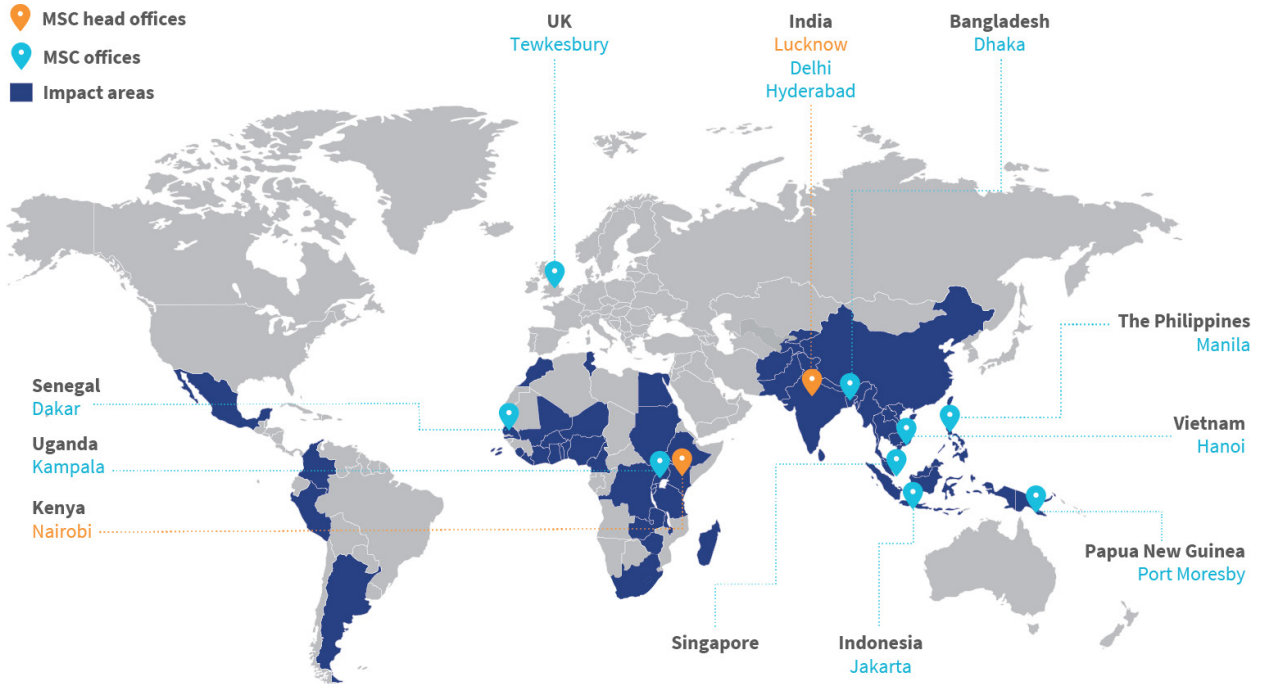
Focusing on information and communication was key. Using behavioral nudges and raising the issue of fairness were more acceptable than compulsory capping. The introduction of voluntary exclusion was popular—this was attempted first before the hard exclusion of higher-income households. The choice to redistribute savings to social programs built acceptance around reforms and increased public confidence in the national government's competence. This was demonstrated in 2016 when 72% of LPG customers strongly agreed that the LPG reform was a good governance initiative¹⁷.

¹⁴<https://www.microsave.net/2018/10/31/fuel-subsidy-reform-experiences-from-india-and-learnings-for-other-countries/>

¹⁵Although it is difficult to attribute exact savings due to the change oil prices and assumptions about ghosts and cylinder uptake.

¹⁶<https://dbtbharat.gov.in/estimatedgain>

¹⁷Mittal, Mukherjee and Gelb, 2017, “Fuel subsidy reforms in developing countries: direct benefit transfer of LPG cooking gas subsidy in India”, CGD Policy Paper 114, December 2017, pp27.



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