



Task Force 2
**Climate Change, Sustainable Energy
& Environment**

Policy brief

PROMOTING ENERGY EFFICIENCY FINANCING WITHIN THE G20: THE ROLE OF FISCAL INSTRUMENTS

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ABSTRACT

Improvements in energy efficiency (EE) can deliver a “double dividend” by reducing emissions and helping to protect the environment. Yet, constraints such as limited access to finance and inadequate policy tools and instruments have placed serious limitations on the promotion of EE improvements. In this policy paper, we first highlight the key policy challenges surrounding the promotion of EE financing in support of green innovation and economic growth. Next, we propose policy actions and recommendations to address such challenges and discuss the effectiveness of various fiscal policy tools and instruments that could help promote EE financing, with a focus on the G20.



CHALLENGE

CONSIDERABLE LACK OF UNIFORMITY IN ENERGY POLICY REFORM WITHIN THE G20

Energy efficiency (EE) is instrumental in tackling energy security. Yet, there is a lack of understanding about the role of EE across the region, and more importantly, within the G20 (Bukarica and Tomsic 2017). There is a historic lack of enforcement and monitoring within G20 countries in terms of implementing the EE commitments made at the 2013 summit (Wilson 2014). Furthermore, variations in the level of policy tools and instruments used to promote EE measures reflect a lack of uniformity in EE reform across the G20.

INSTITUTIONAL CHALLENGES IN FINANCING AND IMPLEMENTING EE PROJECTS

Many different players and institutions are involved in the supply and demand sides of the EE market, making it challenging for both investors and end-users to implement EE projects (Bukarica and Tomsic 2017). While supply-side players (banks, investment funds, energy service companies etc.) generally look for a likely return of investment (ROI) from their EE activities, demand-side players (end-users in the form of building owners, industries, public sector institutions and local authorities etc.) more often aim to benefit immediately from agreements on the implementation of EE projects at the right prices. Furthermore, the fact that a wide variety of players are involved and influenced by different factors (behavioural, socio-economic, and psychological) makes the EE market challenging and generalisation difficult.

BEHAVIOURAL CHALLENGES INFLUENCING EE INITIATIVES

Prior research posits that behavioural aspects (including gender) affect the choice of EE practices (Ebrahimigharehbaghi et al. 2021; Carlsson-Kanyama and Linden 2007). Furthermore, energy poverty in low-income countries within the G20 poses severe challenges for low-income households and limits their participation in EE programs and initiatives (Xu and Chen 2019). Cognitive biases and personal factors also pose essential barriers to EE initiatives (Streimikiene et al. 2020).

Another challenge is keeping the right balance in the use of fiscal instruments that encourage R&D in EE, deter polluting activities, and bring double/multiple dividends.



PROPOSAL

IMPORTANCE

Improvements to EE play a fundamental role in nations' ability to develop a sustainable global economy. EE improvements are an immediate and effective option for transforming energy systems. Improvements in EE reduce waste and bring down the per-unit cost of lighting, heating, refrigeration, and other services. They can also help reduce pollution and greenhouse gas (GHG) emissions. Improving EE through new investments and retrofits, however, requires focused and aggressive policies that support green innovation through stringent EE regulations, fiscal incentives for new technologies, investment incentives for the private sector, and GHG emission pricing.

The United Nations has defined 5 targets and 6 indicators for Sustainable Development Goal 7 (SDG 7). Targets specify goals, while indicators identify the metrics by which the world tracks whether targets are achieved. Target 7.3 requires "doubling the improvement in energy efficiency" by 2030. More than 80 countries worldwide, including G20 member countries, have already taken significant steps toward improving EE, with policy instruments such as EE standards and labelling schemes implemented over the last decades. However, despite policymakers' ongoing efforts, especially in the G20 economies, significant policy gaps remain in finding effective fiscal instruments to incentivise EE investments. Due to the variation in existing policies, significant challenges remain in implementing fiscal instruments to raise awareness and promote investment in EE opportunities.

A review of the relevant global data confirms this deficit in policy making. Since 2015, global improvements in energy intensity, a key measure of an economy's EE, have been declining. This trend suggests that there is an urgent need for action to boost EE. In addition, the COVID-19 crisis has further increased uncertainty. Due to the COVID-19 pandemic and global economic recessions, ongoing investment in EE has dropped drastically, endangering the achievement of SDG 7.3 and compliance with the Paris agreement on climate change. An International Energy Agency (IEA) report finds that efficiency investments declined 9% in 2020 because of COVID-19 and the associated recession (IEA 2020). EE investment needs to grow steadily at a rate closer to 20% annually to maximise all available and cost-effective EE opportunities. Average annual EE investment needs to grow to over USD 584 billion between now and 2025, and then to nearly US\$1.3 trillion per year between 2026 and 2040 (T20 2019). The global market, however, is still failing to realise the full potential of EE.

In the wake of COVID-19, the importance of finance and investment to ensure that EE improvements help achieve climate-related goals is greater than ever. In this context, fiscal policy instruments could play a significant role in bridging the investment gap. Fiscal instruments play an essential role in incentivising investment in EE projects. Such incentives are often provided via a country's tax system, tax subsidies, rebates, and tax holidays for invest-



ments in EE technologies. Incentives could also allow deductions and accelerated depreciation of capital expenditure in EE investments. With the emergence of more varied policy instruments, it is crucial that policymakers consider policies and the barriers they address more realistically.

This policy brief aims to analyse and propose fiscal policies that might help close the EE investment gap globally.

RELEVANCE TO THE G20

G20 economies consume 80% of global energy, and the G20 is committed to increasing EE and reducing energy intensity. Seven years ago, in 2014, under Australia's G20 Presidency, the G20 decided to place EE on the G20 agenda. The G20 Energy Efficiency Action Plan (EEAP) was adopted as a result. In 2016, under China's G20 Presidency, collaboration was reinforced by the G20 Energy Efficiency Leading Programme (G20 EELP).

Fiscal policy plays an essential role in assuring the sustainable use of resources and protection of the environment. This applies to both sides of the government budget. On the revenue side, carbon taxation and green bonds are two essential tools of increasing importance. On the expenditure side, tax cuts and subsidies can incentivise investments in green projects for sustainable development. Various fiscal measures could help green-specific priority sectors and EE projects. Fiscal measures in the form of taxes, subsidies, incentives, and budget allocations can help generate revenue for environmental purposes and redirect the flow of investments from brown to green and low-carbon sectors.

G20 nations must pay greater attention to this topic, especially by employing market-based and fiscal solutions involving the private sector. G20 economies therefore need to take steps to promote private investments in EE projects. The following policy recommendations move in this direction. Furthermore, taxation of CO₂ and other pollutants must be implemented globally at the same rate. Otherwise, companies will simply relocate factories to countries with lower tax rates. The G20 should promote the global harmonisation of pollution taxes and encourage both advanced and emerging nations to follow suit. This proposal might be considered inaccessible and idealistic: however, it could be put into practice first in regions where economic cooperation or economic integration has already been achieved, and could then be expanded globally. GHG tax rates can also be adjusted on the basis of greening efforts made by companies. Some companies are already planting trees and forests to increase greenness. Applying adjusted GHG tax rates would be far more effective than merely measuring pollutant gas emissions.



POLICY RECOMMENDATIONS

1. Fiscal policy instruments aimed at filling the EE investment gap and incentivising policies such as subsidies and tax exemptions can be highly efficient if they are implemented globally at the same tax rate. However, they remain costly, and taxpayers rather than polluters bear the burden of emission reductions (Sarker et al. 2020).
2. Voluntary agreements can also be efficient tools but need careful planning and monitoring, and their outcomes depend heavily on the stringency of the targets negotiated between governments and the private sector.
3. Removing energy price subsidies is one way of boosting private sector investments in green and EE projects.
4. Emission Trading Schemes (ETSs) and cooperative policies can also be used as incentives. However, their outcome is more uncertain and may not necessarily result in EE gains in the short term.
5. Market-based instruments (MBIs) such as energy efficiency obligations (EEOs) or tendering schemes are also cost-efficient instruments that can reduce energy intensity. Nevertheless, monitoring remains a problem during implementation. Finally, special credit lines and risk-sharing schemes are two ways of encouraging EE projects by unlocking funding that is typically held back by the belief that EE projects are risky (Taghizadeh-Hesary and Yoshino 2020).
6. Green adjusted GHG taxation rates should be applied. Some companies have high GHG emissions but try to invest in green and EE projects to reduce their carbon surplus and achieve carbon neutrality. Tax therefore needs to be based on adjusted GHG (Taghizadeh-Hesary, Yoshino, and Phoumin 2021; Yoshino, Taghizadeh-Hesary and Otsuka 2021).
7. Collected taxes should be subsidised to support green and EE projects to guarantee a higher rate of return of these projects. The after-tax rate of return on green and EE projects would then be much higher, and polluting industries would pay higher taxes (Taghizadeh-Hesary and Yoshino 2020).
8. To have a well-developed green bond market, it is crucial to define exactly what green is. This requires an unambiguous definition of a green bond. In this context, green labelling has helped but is not enough. Currently, while 90% green and 10% brown is classed as green, so is 80% brown and 20% green. There are many different definitions of greenness and green bonds can be used to finance them all. We therefore need a clear greenness credit rating to identify a precise greenness ratio. Nowadays, since satellite photos show how much CO₂ is emitted by companies or projects, it is possible to detect and measure emissions in order to accurately assess greenness. Global-



ly speaking, having unified green rating agencies rather than different standards for each country is also necessary (Taghizadeh-Hesary, Yoshino, Phoumin 2021; Yoshino Taghizadeh-Hesary and Otsuka 2021).

9. To have a well-developed green bond market and bridge the EE finance gap, globally unified green rating agencies must replace the different standards that each country currently applies. G20 economies can take the initiative to establish and unify green rating agencies in their own economies first and then expand them to the rest of the world.
10. Finally, it is essential to understand that EE finance schemes alone will not be sufficient to change markets. Robust policy frameworks with the right economic and regulatory drivers to incentivise and bring about change are required to strengthen business cases. Influencing such frameworks must therefore be a key objective of future G20 programmes (Retallack et al. 2019).



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