



How to deliver better policy integration?

Several challenges and possible ways forward in reconciling the delivery of energy policy goals including security and affordability are presented, based on the recent analyses by the International Energy Agency (IEA). This article addresses five topics: multiple challenging policy goals of the IEA's 3 E's (energy security, economic growth, and environmental sustainability); needs in the transformation to low-carbon societies in the energy sectors; major policies and measures for energy sector transformation; multiple related policy goals and multiple benefits of energy efficiency policy; and realising climate and energy policy integration. Overall, this article explores how to better deliver climate and energy policy integration in the real world.

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Introduction

Can low-carbon societies deliver on energy policy goals including security and affordability? To address this question, this article will present recent analyses by the International Energy Agency (IEA) and will draw your attention to several challenges and possible ways forward in reconciling these different objectives.

This article consists of five parts. First, it explains how the IEA's 3 E's have worked on multiple challenging policy goals simultaneously. Second, it illustrates what is needed in the transformation to low-carbon societies in the energy sectors. Third, it explains major policies and measures for energy sector transformation. Fourth, it touches upon multiple related policy goals and the multiple benefits. Finally, it puts forward three necessary components for realising climate and energy policy integration.

IEA's 3 E's

The IEA was found in 1974 as a coordinated response to the 1973 oil crisis for its member countries. Thus energy security has been the core goal of the IEA since the beginning. However, since then, it has evolved into an organisation with a much wider scope. When the climate change issue arose, the IEA expanded its goals to 3 E's: energy security, economic growth, and environmental sustainability. The IEA has been trying to promote the integration of these goals within policies. From data collection to modelling to policy analyses, the IEA has expanded its efforts to address these policy goals in its work. It should be noted that the IEA has included a fourth E, that is engagement worldwide: working closely with non-member countries.

Transformation to low-carbon societies

The Energy Technology Perspectives [1] shows a trajectory for 2050 in a scenario which is largely an extension of current trends (6DS), as well as a trajectory in the 2 degree path (2DS).

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Achieving the 2DS will require contributions of emissions reductions from all sectors, and the application of a portfolio of technologies. In the 2DS scenario, the share of fossil fuels in the global primary energy supply drops by almost a half – from 80% in 2011 to just over 40% by 2050. In the 6DS case, CO₂ emissions keep increasing. Carbon intensity of the energy system, which has been stable for the last 40 years, must be dramatically lower in the future. To do so, decoupling energy use from the economic activity is necessary. What is needed in the transformation to low-carbon societies in the energy sectors are shifts in both energy supply and energy demand.

Policies for energy sector transformation

We are not on track for the energy sector decarbonisation. The only exception to this – a meaningful deployment of renewables – is not enough to meet long-term sustainable energy goals. Without progress in developing and deploying a wide range of technology, it will not be possible to meet the long-term climate, energy security and economic development goals for energy systems [1]. We often hear that climate actions will have negative impacts on economic growth. However, the World Energy Outlook [2] identified four measures that can be implemented at no net economic cost and can cover 80% of the emissions reductions required for achieving the 2 degree path.

But, are these measures enough? The World Energy Investment Outlook [3] shows that the overall investment need in the energy sector is not much in the 450 ppm Scenario compared to the current path, but low-carbon investment will have to be significantly scaled up.

Existing energy sector infrastructure is expected to remain in operation for many years. This infrastructure can be considered as lock-in. Therefore, we need to consider how to “unlock” high emission assets [4].

Multiple goals and multiple benefits

Air quality, climate change and energy are all related to greenhouse gas emissions reductions. We need to find and explore cross-disciplinary synergies among them [4]. Many countries recognise the potential to address these multiple priorities within the air pollution-GHG nexus.

Let me also draw your attention to the multiple benefits of a specific policy measure, such as energy efficiency improvement [5]. Multiple benefits of energy efficiency illustrate why we should explore specific policies in a wider context and the importance of synergy and policy integration for obtaining multiple policy goals.

Components for realising policy integration

I here put forward three necessary components for realising climate and energy policy integration.

First, we need to consider timeframes. Short-term actions should take implications for longer-term decarbonisation into account. Technologies need early action to be developed “on time”.

Second, we need to explore what kind of metrics we use. Energy sector actions are critical for achieving GHG targets, but GHG targets are not the only, or primary, driver of energy sector actions. Thus, we need to include energy sector metrics.

Third, we need systems thinking. A sustainable energy system will be more integrated and efficient, but also more complex. Government at all levels has a key role to play in putting the right market structures in place so that investors and the private sector can get on with delivering infrastructure and services.

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references & notes

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