

# REVIEW

## FOR PARLIAMENTARIANS

### A PERIODIC BRIEF ON RENEWABLE ENERGY

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COP21 in Paris delivered an ambitious agreement on climate change that commits countries to take decisive action, and recognised renewable energy as key to the future energy system. Energy is at the heart of economic activity and the energy sector has undergone dramatic changes in recent years. In this sector, renewables are increasingly cost competitive with fossil fuels and they are now firmly established as a solution to addressing the climate change challenge. Pledges submitted by countries are at the centre of this new international framework and will be periodically reviewed, with a view to raising the level of ambition in the future.

Doubling the share of renewables by 2030 could deliver around half of the emissions reductions needed and, in combination with energy efficiency, keep the rise in average global temperatures within 2°C and prevent catastrophic climate change. Therefore, ramping up renewables is essential to meet climate goals without slowing economic growth and reducing welfare.

In this issue of the REview, Senator Ronan Dantec of France stresses that COP21 was the starting point for legislative action: policies need to now be put in place to accelerate renewable energy uptake globally.

2015 also saw the United Nations General Assembly adopt the Sustainable Development Goals, which for the first time in the UN system, through Goal 7, commit to ensuring access to affordable, reliable, sustainable and modern energy for all, and to substantially increase the share of renewable energy. With these major commitments, the world is lining up behind a sustainable energy future.

*The International Renewable Energy Agency (IRENA) holds a mandate from its over 145 Member States to support countries in their transition to a sustainable energy future. It promotes the widespread adoption and sustainable use of all forms of renewable energy in the pursuit of sustainable development, energy access, energy security, low-carbon economic growth and prosperity.*

*Through regular dissemination of up-to-date and relevant information on renewable energy, including policies, costs, technologies, and socio-economic benefits, IRENA supports parliamentarians and other decision makers in their efforts to increase the share of renewables in their country's energy mix.*

# RENEWABLE ENERGY BENEFITS

## CLIMATE CHANGE MITIGATION

### Tackling climate issues by transforming the global energy system

*The energy sector is the single largest source of greenhouse gas (GHG) emissions. Mitigating climate change, therefore, will require significant changes in the energy sector.*

The 2015 United Nations Climate Conference in Paris was a watershed moment for renewable energy. It reinforced what advocates have long argued: that a rapid and global transition to renewable energy technologies offers a realistic means to achieve sustainable development and avoid catastrophic climate change. Now that renewable energy is recognised as central to achieving climate and sustainability objectives, the challenge facing us has finally shifted away from identifying what needs to be done towards translating this into action.

**Raising ambitions** – The Paris agreement provides a framework for international cooperation and sends a clear signal to all stakeholders to raise their ambition. It is a commitment to act on climate change, taking into consideration specific priorities, circumstances, responsibilities and capabilities. Nationally Determined Contributions (NDCs) submitted by countries are at the centre stage of this new international framework, to be periodically reviewed.

Nearly 190 countries outlined their current plans and strategies to reducing emissions and adapting to rising temperatures in their NDCs, and a vast majority refer to energy transformation as a key component of their contributions. This signals an immense opportunity to achieve emission reductions at scale, while meeting developmental objectives. To seize this opportunity, targets, plans and investments must be translated into national legislations, policies and implementation strategies.

**Detailing the gap** – Many countries have put forward ambitious plans to increase renewable energy for power generation. Combined, the renewable energy plans of Brazil, China, the European Union, India, Indonesia, Japan, Mexico and the United States will result in an increase from approximately 9,000 TWh in 2012 to 20,000 TWh in 2030 (WRI, 2015). Morocco announced a target of 52% renewable energy by 2030 and Bangladesh plans

to increase the wind generation capacity by 400 MW and 100 MW of utility-scale solar power. These trends are seen worldwide, from oil producing economies to Small Island Developing States.

Yet, based on IRENA analysis, the sum of contributions once aggregated still yields a gap to the 2°C target. Fully realising the ambitions contained in the NDCs would still result in an increase in average global temperature of 2.7-3°C. Under current policies and national plans (business as usual), total global energy-related CO<sub>2</sub> emissions will reach 42 Gt per year by 2030. This is too high to limit the future average global temperature increase to 2°C, and far less than the 1.5°C also discussed in Paris.

**Bridging the gap** – IRENA's REmap: Roadmap for a Renewable Energy Future shows that reaching a 30% share of renewable energy in the global energy mix by 2030 would set the world on a pathway to prevent global temperatures from rising above 2°C from pre-industrial levels, and moving beyond a 30% share by 2030 could result in limiting the rise to below 2°C.

## Global temperature increase can be limited to 2°C with 30% of renewable energy in the final energy use worldwide

To bridge this gap, the renewable energy share must increase, as a worldwide average, by 1% per year between now and 2030. The current growth rate is 0.17% per year.

Achieving a 30% share or greater would require not just a significant acceleration of renewable energy deployment, but also an increase in energy efficiency and universal access to modern energy with renewables, in line with the Sustainable Development Goal 7.

#### Further reading:

*REthinking 2015, Renewable Energy and Climate Change (IRENA, 2015)*

*REmap - Roadmap for a Renewable Energy Future (IRENA, 2016)*

## **FIVE PRIORITIES FOR LEGISLATORS - WHAT CAN BE DONE**

If the international community fails to seize the opportunities offered by renewable energy, there is a serious risk that energy and climate targets will be missed. IRENA encourages legislators to consider solutions in the following areas as part of a comprehensive approach to enabling the energy transition.

### **1. Correct market distortions to create a level playing field**

- » Introduce or increase carbon pricing to reflect the external costs of fossil fuels
- » Account for externalities related to human health and climate change in energy pricing
- » Improve the regulatory framework for the renewable energy market

### **2. Introduce greater flexibility into energy systems and accommodate the variability of key renewable energy sources**

- » Put in place interconnectors between national or regional grids to help balance supply and demand for power
- » Enable demand-side management, electricity storage and smart grids to strengthen the integration of variable renewables
- » Encourage real-time market pricing to assess the value of power generation at different times, and redesign markets and remuneration schemes so that demand and supply peak at the same time
- » Introduce new regulatory frameworks to allow new entrants into the power market and reflect the evolving roles of utilities and consumers

### **3. Develop and deploy renewable heating and cooling solutions for urban development projects and industry**

- » Urge cities, local governments and municipalities to adopt efficient, centralised district systems
- » Promote sector coupling between the power sector and heating/cooling to allow surplus heat and electricity to provide heating/cooling for buildings and industry

### **4. Promote transport based on renewable power and biofuels**

- » Advocate trams, buses, freight and passenger vehicles powered by renewables-based electricity to become the predominant forms of city transport – through Smart City planning, rollout of recharging and supply infrastructure, incentivising electric vehicle (EV) sales and investment in charging points, and boosting market prospects for vehicle technologies ready for mass production
- » Support the commercialisation of advanced liquid biofuels for widespread use, especially in aviation, freight and shipping – accelerate production and R&D for advanced liquid biofuels, require non-renewable fuels to be blended with liquid biofuels, and promote use of biogas to complement liquid biofuels

### **5. Ensure the sustainable, affordable and reliable supply of bioenergy feedstocks**

- » Guarantee supply of reliable and affordable bioenergy products, in particular for applications for which no other renewable energy technology is suitable, such as high-temperature process heat in industry – through market expansion, and vertical integration of the fuel chain

*REmap: Roadmap for a Renewable Energy Future (IRENA, 2016)*

## POINT OF VIEW

### Ronan Dantec Senator, France

Ronan Dantec was elected Senator in 2011 and belongs to the Ecologists' group in the French Senate. He is Vice-President of the Commission on Territorial Planning and Sustainable Development.

Since the beginning of his mandate, Senator Dantec has been actively involved in shaping the energy policy of his country, and was among the members of parliament who took part in the National Debate on the Energy Transition which preceded the adoption of the "Energy Transition for Green Growth" law.

In September 2013, he was asked by the government to produce a report entitled "Local authorities in the backdrop of Paris Climate 2015: From local actor to global facilitator".

Ronan Dantec also presided over the committee in charge of organising the World Summit of the Sustainable City, ECOCITY, in Nantes in September 2013. The summit concluded with the Nantes Declaration, a roadmap for local governments in the lead up to the Paris climate conference 2015.

[www.iclei.org/worldmayorssummit.html](http://www.iclei.org/worldmayorssummit.html)



#### **Q: How should the role of parliamentarians evolve in the aftermath of COP21 in Paris?**

I believe that since Paris we have entered into a new phase. Up until Paris, inter-governmental negotiations have been the fundamental pillar of national contributions. The day after Paris, everyone has been called upon to act. Parliamentarians have the great responsibility of making legislation evolve to allow governments to reach and go beyond the targets they have included in their Nationally Determined Contributions (NDCs). The objective is indeed to have a dynamic process and to allow for these NDCs to evolve and become more ambitious over time.

#### **Q: Energy is the largest single source of greenhouse gas emissions. As most forms of renewable energy emit little or no CO<sub>2</sub>, accelerating the deployment of renewable energy will contribute greatly to decarbonising the energy sector and mitigating climate change. Numerous NDCs include renewable energy development. How can parliamentarians help drive even more renewables action?**

We have recently passed an ambitious law in France on the energy transition and climate change mitigation. The adoption of this law was preceded by an important national debate with which members of parliament were closely associated. Thanks to this upfront work and the subsequent legislative debates, we have managed to step up the ambition of this law. As an example, the law is paving the way for fixing a carbon price, which was not even included in the initial proposition.

We have also managed to provide a legal framework that strengthens the role of local and sub-national governments. I believe that, if the French law is, to this day, probably the most ambitious one, it is precisely because it binds all French territories in applying international agreements. Every single municipality grouping is now bound to reducing its greenhouse gas emissions by 40% by 2030. This will definitely help in initiating local dynamics.

Placing local governments at the heart of the strategy is key. Fully achieving the overall target relies on local choices, such as the provision of public transport, the deployment of heat networks, the integration of renewable energy in cities, etc. This is a major step forward by the French law.

**Q: You have stated before that COP21 can only attain its objectives if the negotiations on the reduction of greenhouse gas emissions are combined with negotiations on sustainable development.**

This is precisely what is at stake and linking sustainable development to the fight against climate change is the only way to make our objective prevail.

The recent negotiations are not only about climate change. The fact that the newly adopted Sustainable Development Goals contain a specific target on sustainable energy access, and a goal on sustainable cities, is a major development for the international agenda and the national agendas alike.

Now we ought to adopt a common narrative between development, which necessarily implies energy access, and climate change mitigation schemes. I strongly believe that the only way to achieve our goals is by convincing local populations that their development will be initiated by changing their energy system model. If we try to convince local populations to change their energy mix without demonstrating the extended benefits of this transformation, there will be strong opposition.

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**Q: In the lead-up to the Climate Conference in Paris, you have recommended to break free of institutional barriers and to initiate action with multiple stakeholders. In this multilateral mode of governance, where do you see the involvement of IRENA, as an intergovernmental agency, in supporting your legislative work to help you accelerate the deployment of renewable energy?**

I believe that still to this day, there is a great need to disseminate information. Parliamentarians worldwide need to be made aware that renewable energy is now competitive. I come from a country which lagged behind for a long time in deploying renewable energy, because it was often presented as being expensive. We have therefore made different energy choices, which in fact today are reaching their limits.

There is still today a great number of developed and developing countries that remain to be convinced that deploying renewable energy makes sense economically. An agency such as IRENA has an important role to play in informing and convincing parliamentarians that the energy transition is a sensible choice. A lot of people are still doubting it today. This should be the primary action.

Then IRENA should be in a position to offer a legislative analysis of effective policies and an overview of the progress of other countries in that matter. As these are often very technical debates, parliamentarians need the technical support of a neutral body, and IRENA as an international agency is far removed from local pressure groups. Information issued by IRENA has credibility and will be received as such. For example, the French law covers the supporting mechanisms for renewable energy. It is highly complex. Some parliamentarians are specialists, but for most legislators it can be difficult to comprehend.

# POLICY TOOL IN FOCUS

## Setting targets for renewable energy

- » Why set targets?
- » Different target types
- » Efficient and effective targets
- » Combining targets for renewables and climate change

Renewable energy targets have emerged as a popular mechanism to set national and regional economies on the path towards a lower carbon and a more sustainable energy system.

164 countries worldwide have now adopted renewable energy targets, with 59 enacting their targets in law

Targets play a number of important roles in supporting renewable energy development. They indicate the envisioned trajectory of market growth and enable stakeholders to allocate resources more effectively; they help support investment decisions regarding capital allocation and hiring; they can make it easier to plan other long-term investments such as transmission and distribution infrastructure; and finally, they can anchor training and skills development, given the long time frames involved in building human capacity for the sector.

Renewable energy targets are now an integral part of the global energy landscape. In 2015, 164 countries

worldwide adopted some type of renewable energy target.

**Setting Renewable Energy Targets** - How targets are designed and implemented will play a critical role in shaping and defining the global energy mix in the decades ahead. [see Policy Compass, p.6]

Since their emergence in the 1970s in the wake of the oil crisis, renewable energy targets have taken many different forms and can be represented along a spectrum depending on how specific, measurable and binding they are. They have ranged from simple government announcements to full-fledged and legally binding obligations with clear, quantifiable metrics and specific enforcement, compliance and monitoring mechanisms. In some cases, renewable energy targets are simply embedded within sectoral plans, in other cases, they are part of national development plans articulated in multi-year plans.

While most targets currently adopted around the world lack clear enforcement mechanisms and penalties, a number of countries are enacting their targets in law. As of mid-2015, at least 59 jurisdictions in the world had adopted legally binding renewable energy targets, up from 12 in 2000.

In some countries, the process of setting targets has been very comprehensive, beginning with an assessment of resource availability and costs, balancing costs with benefits and overall objectives, informed by sound data and analysis and involving a wide range of stakeholders before deciding the level and type of target.



**SMART Targets** - One of the most important features of effective targets is that they should be SMART (i.e. Specific, Measurable, Achievable, Realistic and Time-bound).

In addition, a target can only guide effectively if it is possible to know and measure to what extent it has been achieved; this also entails that targets should be monitored to measure the effectiveness of policies and enable continuous adaptation and improvement.

The degree of realism is linked to both the time horizon and the level of effort required to reach the target. Ideally, targets should stimulate stakeholders to go beyond the business-as-usual trajectory and should be based on a clear strategic vision for the future.

## Targets should be SMART: Specific, Measurable, Achievable, Realistic and Time-bound

In addition to being SMART, renewable energy targets should be motivating, in the sense that they should support specific, high-priority policy objectives.

**Making targets mandatory matters** - Establishing targets in law is an important step in increasing their credibility and longevity. While most targets currently adopted around the world lack clear enforcement mechanisms or penalties, a number of countries are enacting their targets in law. Making targets binding in law helps reassure investors that a local market will continue to exist for their product in the future. Furthermore, legally binding targets are harder to repeal and therefore may be less vulnerable to changes in the political climate. It should be noted, however, that binding targets not only require compliance and enforcement mechanisms but also an institutional structure to monitor and enforce them.

**Who is obligated, and how, also matters** - A key consideration, whether targets are binding or aspirational, is on whom the obligation to reach the target is imposed. In some jurisdictions, governments are responsible for meeting the target. In such cases, enforcement mechanisms are unclear, unless the obligation is specifically delegated to a relevant entity. In

some countries, the target is embedded in the policies that obligate the relevant entities. In the absence of independent regulation and enforcement, the targets themselves remain aspirational, rather than binding in any legal sense.

Effective renewable energy targets should be backed by clear strategies and specific policies - While underscoring the importance of establishing renewable energy targets, targets alone are not enough. In order to be seen as credible by investors and to provide a clear trajectory for the future evolution of the energy mix, they need to be accompanied by a clear strategy and backed by specific policies and measures. Linking renewable energy targets to specific policies is critical to make targets more meaningful and to ensure their effectiveness.

**How climate policies and renewable energy targets work together?** - In many ways, renewable energy targets can help accelerate countries' transition to a lower carbon and more sustainable energy system. This raises the question of how climate policies can best complement renewable energy targets and policies.

## Climate policies should complement renewable energy target policies; the two can reinforce each other if designed in a robust fashion

Climate policies and renewable energy targets can reinforce each other on such crucial goals as determining carbon prices. Renewable energy targets can also form part of emission cap-and-trade schemes.

Carefully designed compatible targets for renewables will make climate policies stronger.

### Further reading:

*Renewable Energy Target Setting (IRENA, 2015)*

# POLICY COMPASS

## Key functions of renewable energy targets throughout the policy-making cycle

Rather than being motivated by one single overarching objective, governments are increasingly adopting renewable energy targets to meet multiple interconnected objectives of energy security, sustainability and economic growth.

The main functions performed by targets can be regrouped along the process of policy making during its three main stages: formulation, implementation and evaluation:

### 1. Renewable energy targets in the policy formulation stage -

Targets serve an important exploratory and knowledge function. They can:

- » facilitate the development of the information base by prompting the collection of key data
- » result in the validation of information through consultation
- » reveal gaps in knowledge
- » increase the transparency of policy making
- » stimulate debate, raise awareness and acceptance

### 2. Renewable energy targets in the policy implementation stage -

They can:

- » improve planning
- » provide clear direction of policy to stakeholders
- » signal political commitment
- » encourage alignment of public policies
- » motivate stakeholders to take action
- » anchor strategic priorities and scenarios
- » foster accountability

### 3. Renewable energy targets in the policy evaluation stage -

Targets serve as a measure of the effectiveness of various policies and measures. They can:

- » supply concrete milestones for evaluation and adjustments
- » show deficiencies in current operations
- » provide opportunities to take action to correct deviations
- » expose data needs and discrepancies

*Renewable Energy Target Setting (IRENA, 2016)*

# CASE STUDIES

## CABO VERDE increases renewable energy targets

In island jurisdictions such as Cabo Verde, the costs of pursuing a more aggressive renewable energy target were found to be below business as usual estimates of generation costs based on a continued heavy reliance on fossil fuels. In Cabo Verde's case, it is estimated that achieving its 50% target, as well as its now revised 100% target for the electricity sector, will result in net savings for the government, the national utility, as well as ratepayers, as domestic renewable energy resources on the island (primarily from wind and solar) currently undercut the avoided cost of generation from the islands' existing diesel and heavy fuel oil plants. Conducting an analysis of the full costs and benefits can therefore help strengthen the case for renewable energy, and may even help identify potentials and cost savings that were not anticipated at the outset.

## INDIA quintuples solar targets

In India, consecutive bidding rounds since the launch of the National Solar Mission in 2010 have seen a reduction in the average price of contracted solar power. The price has now stabilised around 6.5 to 7 INR/kWh after a period of four years during which deployment has gone from under 40 MW to 3 GW. With a local solar industry in place, the government has recently decided to scale up its solar target from 22 GW by 2022 to 100 GW. While this would require a remarkable shift in the current trajectory of deployment, the industry has generally supported the rise in ambition with total (non-binding) commitments reaching over 160 GW of solar power capacity. The scale-up in targets has also coincided with efforts to further reduce the cost of solar generation through the development of large-scale solar parks. Between 2014 and 2019, India aims to set up 25 solar parks with a cumulative capacity over 20 GW.

## MONGOLIA's renewable energy targets in a regional perspective

Mongolia is a resource-rich country with an abundance of renewables, such as solar, wind and hydropower resources. The Government of Mongolia has demonstrated a political commitment to green development, plotting the transition to an energy future based on higher shares of renewables. Mongolia has declared a two-phase renewable energy target, aiming to increase renewables from 7% of installed power-generation capacity to 20% by 2023, and to further increase this to 30% by 2030. The Renewable Energy Law, passed in 2007, has provided the legal basis to regulate the generation and supply of renewable power, and the improved legislation, amended by the parliament in June 2015, should create a market-oriented framework for the energy sector. However, Mongolia has much more renewable energy potential than is required by its domestic consumers. Therefore, issues pertaining to scaling up renewable energy deployment are being addressed from a regional and strategic perspective.

## SOUTH AFRICA's integrated resource plan consultation process

The South African Department of Energy undertook a broad consultation process during the development of its Integrated Resource Plan by creating a web portal to disclose key documents underpinning, among others, the renewable energy targets. Following a first round of public consultation, a second draft version of the plan was released and was open for comments for 60 days. In this plan, a target of 11.4 GW by 2030 was envisioned. Over 200 written comments were received, which led to some of the model assumptions being altered. One of the main changes was the inclusion of up-to-date learning rates of renewable energy technologies, making the costs lower over time. This change was supported by a report based on a market analyses of solar PV to show recent changes in costs. As a result, technology-specific renewable energy targets were increased to a total of 17.8 GW by 2030. The greater emphasis on renewable energy in the revised plan was due in large part to the input of stakeholders and to the transparency of the target formulation process.

# IRENA'S 2016 LEGISLATORS FORUM

## BRIEF ACCOUNT

Last January, IRENA held its first meeting of legislators, the Legislators Forum 2016, in Abu Dhabi, United Arab Emirates. [Agenda of the Legislator's Forum](#)

During this one-day meeting, legislators exchanged best practices and learned from the experience of each other on the deployment of renewable energy and solutions that enable countries to meet their domestic energy needs. [Video, How can IRENA support](#)

Many legislators also attended the two-day IRENA Assembly on 16-17 January 2016, gathering around 1000 participants and global energy leaders from more than 150 countries. Read more on the [IRENA Newsroom](#)

### Enabling policy instruments and sharing of experiences

The current trends and dynamics in the energy sector were presented by various experts, with a focus on the enabling environment for scaling up renewable energy deployment. [IRENA Secretariat PowerPoint presentation](#)

These presentations led to a fruitful debate among legislators on appropriate support mechanisms to deploy renewable energy given the global consensus on the importance of renewables in addressing both the climate change challenge and sustainable development goals.

In particular, legislators discussed the effectiveness of feed-in-tariffs and auctions or tendering schemes in increasing the share of renewable energy.

### Conclusions of the Legislators Forum in eight points

The 2016 Legislators Forum identified eight key enablers supporting an accelerated deployment of renewable energy worldwide, which were reported to the sixth session of the IRENA Assembly on the next day. [Video, Conclusions from the Legislators Forum](#)

## EIGHT KEY ENABLERS IDENTIFIED BY THE FORUM

- » Capitalise on the momentum generated by the adoption of the Sustainable Development Goals and the Paris Agreement to include climate protection into countries' constitutions in order to strengthen its legal value.
- » Adopt broad range renewable energy legislation to ensure a stable legal framework, which is one of the key enablers for investments, and establish financial instruments at the global level to lower the cost of capital for renewable energy investment.
- » In the legislative approach, allocate as much importance to the transport and heating/cooling sectors as to the electricity sector.
- » Couple energy efficiency and renewable energy laws to maximise impact.
- » Put in place the necessary infrastructure at large: grids, mini-grids, district cooling/heating systems, etc.
- » Promote fair markets that take into account externalities of fossil fuel use, and flexible markets that can adapt to an increasing share of renewables in the energy mix.
- » Extend modelling to socio-economic benefits derived from renewables (jobs, health, trade balance, energy access, etc.).
- » Make use of Parliaments to organise stakeholders.

SAVE THE DATE

**LEGISLATORS FORUM 2017**

**12-13 JANUARY 2017**

**ABU DHABI, UNITED ARAB EMIRATES**

# SELECTED PUBLICATIONS



REview for Parliamentarians / **Issue No1**

**English:** [http://www.irena.org/Links/IRENA\\_Review\\_No\\_1\\_Oct2015\\_EN.pdf](http://www.irena.org/Links/IRENA_Review_No_1_Oct2015_EN.pdf)

**French:** [http://www.irena.org/REview/IRENA\\_Review\\_No\\_1\\_Oct2015\\_FR.pdf](http://www.irena.org/REview/IRENA_Review_No_1_Oct2015_FR.pdf)

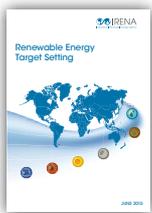
**Spanish:** [http://www.irena.org/REview/IRENA\\_Review\\_No\\_1\\_Oct2015\\_ES.pdf](http://www.irena.org/REview/IRENA_Review_No_1_Oct2015_ES.pdf)



**REmap: Roadmap for A Renewable Energy Future, 2016 Edition**

Doubling renewables in the global energy mix by 2030 is not only feasible, but cheaper than not doing so. Economic savings would far exceed the costs. It would create more jobs, boost economic growth and save millions of lives annually through reduced air pollution. It would also, when coupled with greater energy efficiency, put the world on track to keep the rise of temperatures within 2°C, in line with the 2015 Paris Agreement. But to meet that goal, renewable energy deployment must happen six times faster than current rates.

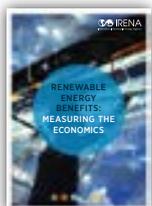
This second edition of IRENA's global roadmap provides an in-depth perspective on the energy transition in 40 economies, representing 80% of global energy use.



**Renewable Energy Target Setting**

What are renewable energy targets? Why set a renewable energy target? How should they be designed and translated into specific policy instruments?

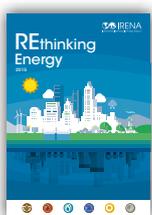
Renewable energy targets have become a defining feature of the global energy landscape. The report, produced by the International Renewable Energy Agency (IRENA), highlights the critical importance of definitions and specific design features suited to different objectives. It lays out a comprehensive framework, which can inform policy makers as they embark on the task of designing – or revising – their respective national or local renewable energy targets.



**Renewable Energy Benefits: Measuring the Economics**

This report provides the first quantification of the macroeconomic impact of doubling the global share of renewables in the energy mix by 2030. The study builds on IRENA's previous work on the socio-economic benefits of renewable energy, as well as on REmap 2030, IRENA's roadmap for doubling the global share of renewables.

Doubling the share of renewables in the energy mix by 2030 would increase global GDP by up to 1.1 per cent, improve welfare by up to 3.7 per cent and support over 24 million jobs in the sector.



**REthinking Energy: Renewable Energy and Climate Change**

The second edition of *REthinking Energy* – the flagship report from the International Renewable Energy Agency (IRENA) – looks at how the transition to renewables could help limit global warming. As the report points out, renewable energy is at the core of any strategy for countries to meet climate goals while supporting economic growth, employment and domestic value creation.

*REthinking Energy: Renewable Energy and Climate Change* was released in November 2015, ahead of the 21st Conference of Parties (COP21) to the United Nations Framework Convention on Climate Change, held in Paris, France.

For more: [www.irena.org/publications](http://www.irena.org/publications)

# ANNOUNCEMENT

SAVE THE DATE

## LEGISLATORS FORUM 2017

12-13 JANUARY 2017

ABU DHABI, UNITED ARAB EMIRATES

If you are interested in participating, send an email now to [legislators@irena.org](mailto:legislators@irena.org) and join us in 2017 for the second edition of the Legislators Forum.



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## NEXT ISSUE OCTOBER 2016

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