IRENA
International Renewable Energy Agency

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Note of the Director-General for Programmatic Discussion on
**REmap 2030 – A Global Renewable Energy Roadmap**

## REmap 2030 Overview

1. **A Doubling in the share of renewables is both feasible and affordable**. The United Nations General Assembly declared the period 2014-2024 the Decade of Sustainable Energy for All (SE4ALL). The UN Secretary General has defined three SE4ALL objectives: universal access, doubling the rate of energy efficiency improvements and doubling the renewable energy share by 2030. IRENA Member countries have asked IRENA to explore the renewables objective in more detail.

2. In response to the challenge posed by SE4ALL, IRENA has proposed REmap 2030 as a roadmap for doubling the global renewable energy share between 2010 and 2030. Its purpose is to accelerate global deployment of renewable energy through the identification of technical opportunities, their economics, and enabling policy framework conditions. As part of the Work Programme 2014-2015 IRENA aims to translate REmap 2030 findings into policy action and investment proposals.

3. Existing policies of the 26 countries analysed to date will result in an increase of the global renewable energy share from 18% in 2010 to 21% in 2030. However REmap 2030 shows that doubling the renewable energy share in the global energy mix is both technically and economically feasible, increasing the global renewable energy share to 36% is thus an achievable goal.

## REmap 2030 Country Findings

4. **Country opportunities vary.** REmap 2030 provides detailed findings on a country and sector level. Results show countries start from different levels of renewable energy share in their total final energy consumption (TFEC), ranging from 0% to more than 40%.

5. Renewable energy technology options can raise the renewable energy share in the global energy mix from the reference case of 21% to 30% share. Energy efficiency and energy access based on modern renewables can advance the share of renewables in the global mix to as much as 36% in 2030. Countries' renewable energy share potential in TFEC ranges from 6% (UAE) to 66% (Denmark) in 2030.

6. A set of indicators has been developed that can be used to analyse and track progress in renewable energy deployment and in 2014, IRENA will release a set of comprehensive REmap 2030 country reports for China, Germany, India and the United States as well as summary findings for 22 other countries. Country and regional coverage will be broadened with a special focus on South East Asia, South Asia, Latin America and the Caribbean and countries of the Africa Clean Energy Corridor. These detailed reports will provide the basis for a discussion of transition policy opportunities.

7. The nexus of renewable energy and energy efficiency will have its own dedicated action team as part of the Work Programme 2014-2015 where socioeconomic benefits will be analysed in more detail.

## Policy Action

8. **The need for policy action has been identified in five key areas,** namely: 1) planning transition pathways for renewable energy; 2) creating an enabling business environment; 3) creating and managing knowledge; 4) ensuring renewable energy integration; and 5) unleashing innovation. International cooperation in matters pertaining to economies of scale, increased trade of renewable electricity and biomass commodities, increased and expedited knowledge of technology, innovation and experience sharing, are all indispensable to not only reach but to go beyond the goal to double the renewable energy share in the global energy mix by 2030.

## REmap 2030 Sector Findings

9. **More attention is needed for end-use sectors.** Forty percent of the total global modern renewable energy use potential in 2030 is within the electricity sector while 60% is located in the end-use sector.

10. The growth of renewable energy share, between 2010 and 2030 varies from sector to sector. In 2010, the share of renewables in power production was 18%. With policies in place, this share is projected to increase to 26% by 2030. However, the introduction of new policies could push this as high as 44% by 2030.

11. The share of renewables within the TFEC in the manufacturing industry sector was around 11% in 2010. This share is expected to increase to around 15% by 2030 with current policies; REmap 2030 analysis shows that a 26% share of renewables in TFEC in this sector is a feasible target for 2030, provided better policies are put in place.

12. Owing to the use of traditional biomass, the building sector provides considerable challenges but also tremendous opportunities. Modern renewables, including renewable electricity, accounted for around 14% of renewables within the sector's TFEC in 2010. This is expected to rise to 20% by 2030, with analysis showing a potential to almost double to 38%.

13. In the transport sector, only around 3% of TFEC was renewable in 2010. Under existing policies, this share is expected to double by 2030. REmap 2030 however projects a 15% share is possible with biofuels only or 17% should electric mobility be accounted for.

14. IRENA will cooperate with country and private sector experts to identifying opportunities in key technology areas and gain more insight into potentials and costs and identify policy needs to accelerate the deployment of renewable technologies.

### The Potential of Renewable Energy Use in Manufacturing Industry

15. **Renewable energy use in the manufacturing industry is grossly underestimated.** According to the results of the manufacturing industry roadmap, the renewable energy share of this sector could be as high as 34% by 2030. Unfortunately, the sector's renewable energy potentials have been overlooked thus far.

16. Realizing these techno-economic potentials would depend on a number of factors including the availability of low-cost biomass resources and biomass logistics, $CO_2$ prices, and resolving technical constraints in industrial plants to integrate renewable energy technologies for existing facilities. REmap 2030 identifies priority areas that warrant policy action for policy-makers to target action.

### Biomass as a Critical Resource

17. **Biomass is a critical resource with uncertain prospects.** Biomass accounts for more than half of total renewable energy potential in 2030. It accounts for the bulk of renewable potential in end-use sectors and could account for as much as 20% of total global primary energy supply, according to the findings of REmap 2030. In comparison, the current share of biomass accounts for a slim 10% of total global primary energy supply. Residues and forest regrowth account for the bulk of projected growth in biomass supply, thus competition with food production is limited.

18. REmap 2030 considers critical aspects such as the volume of biomass available and recoverable by 2030; supply cost and future prices; optimal use across different sectors; and the role of governments in strengthening bioenergy supply and use.

**Countries are invited to comment on the findings and proposed prioritisation of activities.**

**Topics for Discussion:**

- How can REmap 2030 findings be used in the discussion on international policy?
- Are there specific technology or policy topics that should be deepened in REmap 2030?
- What can IRENA do to accelerate the deployment of modern biomass?