



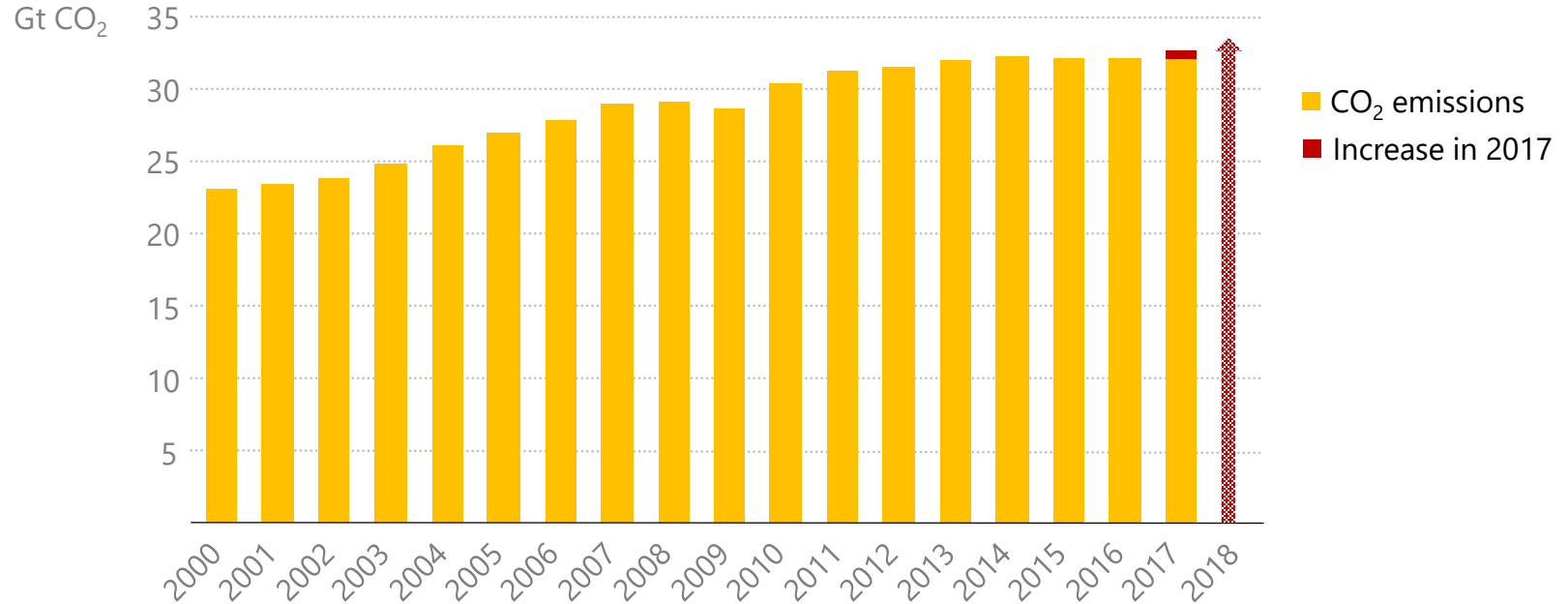
Tracking Clean Energy Progress (TCEP): Where are we along the road of energy transitions?

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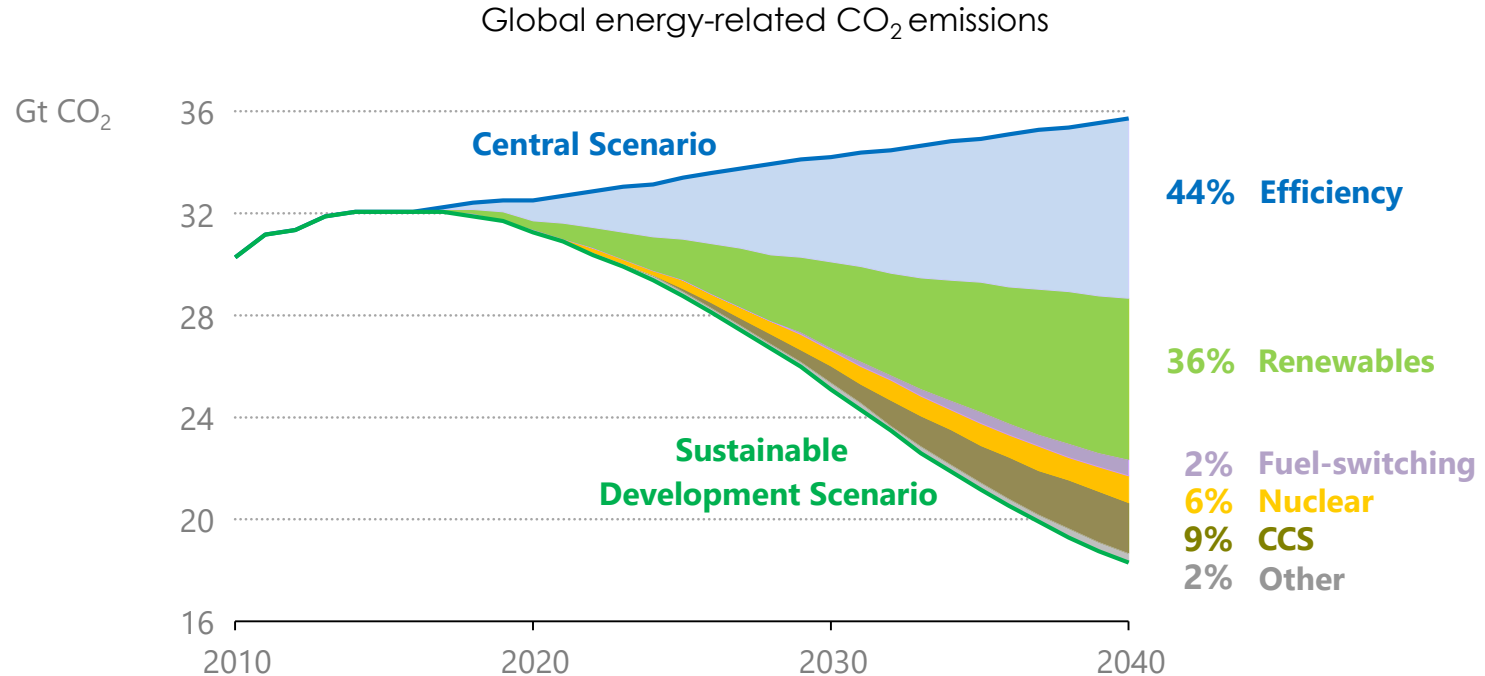
- **Paris Agreement goals are slipping out of reach**
 - *IEA estimates energy-related CO₂ emissions will reach an historic high in 2018*
 - *To meet Paris goals, CO₂ emissions need to peak around 2020 and enter a steep decline*
- **The IEA Family of countries now covers almost 75% of global energy demand, so is ideally placed to help countries meet their energy objectives**
- **The IEA offers data, analysis and solutions across “All Fuels and All Technologies”**
- **IEA analysis is key to tracking progress of global energy transitions**
 - *Assessing progress on energy transitions, under the Talanoa Dialogue and beyond*
 - *Helping to drive further NDC ambition*

Global energy-related CO₂ emissions



Global emissions are set to increase in 2018 - again
The world is not moving towards the Paris goals, but rather away from them

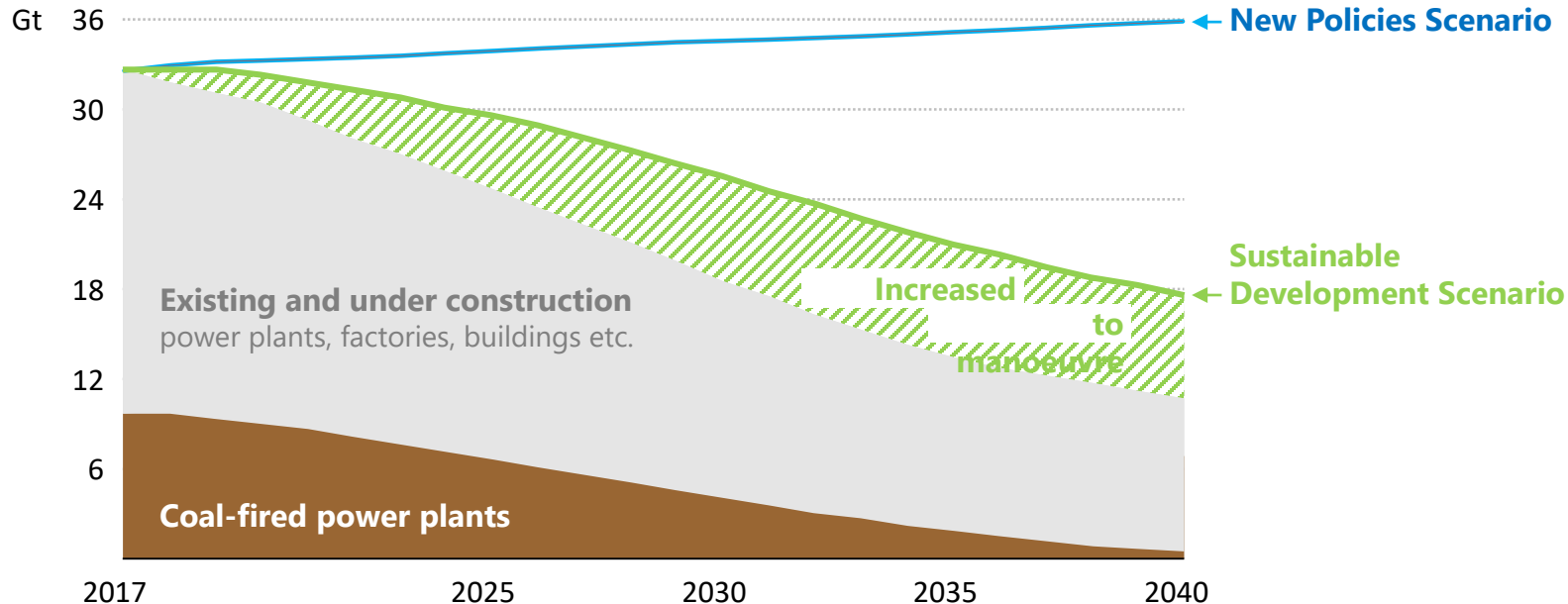
Where do we want to go?



**A wide variety of technologies are necessary to meet goals,
with energy efficiency and renewables playing lead roles**

Can we unlock a different energy future?

Global energy-related CO₂ emissions



Coal plants make up one-third of CO₂ emissions today and half are less than 15 years old; policies are needed to support CCUS, efficient operations and technology innovation

Tracking Clean Energy Progress 2018

Tracking Clean Energy Progress

Informing Energy Sector Transformations

The IEA's newly-enhanced Tracking Clean Energy Progress provides a comprehensive and rigorous assessment of a full range of energy technologies and sectors that are critical in a global clean-energy transition. It includes the most up-to-date information for where technologies are today and where they need to be according to the IEA's [Sustainable Development Scenario](#), a pathway to reach the Paris Agreement well below 2°C climate goal, deliver universal energy access and significantly lower air pollution.

Are clean energy technologies on track?

Some technologies have made tremendous progress in 2017 – particularly solar PV, LEDs and EVs – but most are not on track. Energy efficiency improvements have slowed and progress on key technologies like carbon capture and storage remains stalled.

Click on a sector or technology for a detailed assessment of recent trends and progress.

On track More efforts needed Not on track One to watch

Power	Buildings	Transport	Industry	Energy integration
<ul style="list-style-type: none">Renewable power<ul style="list-style-type: none">Solar PVOnshore windOffshore windHydropowerBioenergyGeothermalConcentrating solar powerOceanNuclear powerNatural gas-fired powerCoal-fired powerCCUS in power	<ul style="list-style-type: none">Building envelopesHeatingCoolingLightingAppliances & equipmentData centres & networks	<ul style="list-style-type: none">Electric vehiclesFuel economy of cars & vansTrucks & busesTransport biofuelsAviationInternational shippingRail	<ul style="list-style-type: none">ChemicalsIron & SteelCementPulp & paperAluminiumCCUS in industry & transformation	<ul style="list-style-type: none">Energy storageSmart gridsDemand responseDigitalizationHydrogenRenewable heat

<https://www.iea.org/tcep/>

High-level indicators

Tracking Clean Energy Progress

Tracking clean energy innovation progress

IEA's most rigorous and timely innovation analysis ever indicates a 13% estimated increase for government low-carbon energy R&D spending in 2017 and, while corporate clean energy R&D dropped slightly in 2017, the five-year trend shows 5% annual growth. Given the importance of innovation to achieve long-term energy transition goals, these increases are important but many innovation gaps remain. As part of our new "Innovation Tracking Framework," IEA experts have highlighted 100 innovation gaps across 38 clean energy technologies to help identify opportunities for both public and private investment.

Summary

Public spending on energy RD&D

Government RD&D spending on low-carbon energy technologies grew by 13% in 2017 – a very welcome increase after years of decreases and stagnation.
[Learn more](#)



**The IEA works around the world to support
accelerated clean energy transitions that are**

enabled by real-world SOLUTIONS

supported by ANALYSIS

and built on DATA



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