The EU has ambitious targets for reducing carbon emissions, improving energy efficiency and leading in renewable energies. Achievement of these targets – in the context of the Energy Union strategy – will require huge investment in clean energy sources and a smarter energy system. The following publications of the European Parliament’s Research Service and its Policy Departments provide background information and analysis.

**Financing the transition to clean energy**
*Briefing by Gregor Erbach, European Parliamentary Research Service, November 2017*
In order to meet the targets of the Paris Agreement, emissions of greenhouse gases must be near zero in the second half of this century. For the energy sector, this means that fossil fuels must be phased out and replaced by low-carbon energy sources. This is an unprecedented transition in energy production and consumption, requiring trillions of euros in investment. This briefing gives an overview of EU policy and funding measures in support of this objective.

**Promotion of renewable energy sources in the EU: EU policies and Member State approaches**
*In-depth analysis by Gregor Erbach, European Parliamentary Research Service, June 2016*
This paper analyses the development of renewable energy sources (RES) in the EU, presenting the principal support mechanisms for RES, as well as developments in selected Member States. It outlines the main technical and regulatory challenges associated with an increasing share of renewable energy and highlights the involvement and positions of the European Parliament.

**Cities, frontline of climate action**
*Briefing by Vivienne Halleux, European Parliamentary Research Service, October 2017*
Cities have a crucial role to play in addressing the climate change challenge and delivering on the ambitions of the Paris Agreement. In the European Union, where nearly three quarters of the population live in urban areas, many cities are leading the way in this regard, taking action in three areas central to increasing energy efficiency and reducing emissions – namely, buildings, energy supply and transport.

**Assessing the state of Energy Union**
*Briefing by Alex Benjamin Wilson, European Parliamentary Research Service, May 2017*
The European Commission’s second report on the state of the Energy Union, delivered in February 2017, paints a picture of considerable progress just two years into the Energy Union strategy. This briefing provides an overview of the wider picture as far as the numerous components of the strategy are concerned.

**Research for ITRE committee – European Energy Industry Investments**
*Study by European Parliament’s Policy Department for Economic and Scientific Policies, February 2017*
This paper provides an overall assessment of European investments in the electricity sector, and provides policy recommendations to facilitate investment in the electricity sector which is needed to enable the transition to a
low-carbon energy supply, while realising a fully integrated and interconnected electricity system, enhancing competitiveness and ensuring security of electricity supply.

**Research for REGI committee – Financial instruments for energy efficiency and renewable energy**

*Study by European Parliament's Policy Department for Structural and Cohesion Policies, August 2017*

This study analyses ESIF financial instruments (FIs) for energy efficiency and renewable energy sources and their implementation. The results suggest that, because implementation is highly context-dependent, transferability of lessons and good practice is limited. Energy efficiency and renewables FIs require specialist support and are constrained by operational programme lifecycles.

**Research for ECON committee – Competition Policy and an Internal Energy Market**

*Study by European Parliament's Policy Department for Economic and Scientific Policies, July 2017*

This study identifies selected important competition-related issues in the internal energy market. It discusses the role of competition law with respect to the following issues: state aid, congestion management, capacity remuneration mechanisms, balancing markets, effective competition between suppliers, integration of new players in the market, and energy poverty.

**Fact Sheets on the European Union: Financing the Trans-European Networks**

*Fact sheet by Beata Tuszyńska / Frédéric Gouardères, European Parliament's Policy Department for Structural and Cohesion Policies, June 2017*

**Further reading**

**Research for ENVI committee – Implementing the Paris Agreement: New Challenges in View of the COP 23 Climate Change Conference**

*Study by European Parliament's Policy Department for Economic and Scientific Policies, October 2017*

**Internal market for electricity**

'EU Legislation in Progress' briefing by Gregor Erbach, EPRS, March 2017

**Promoting renewable energy sources in the EU after 2020**

'EU Legislation in Progress' briefing by Alex Benjamin Wilson, EPRS, October 2017

**Revised Energy Efficiency Directive**

'EU Legislation in Progress' briefing by Nikolina Šajn, EPRS, March 2017

**Goverance of the energy union**

'EU Legislation in Progress' briefing by Alex Benjamin Wilson, EPRS, October 2017

**Initial appraisal of a European Commission Impact Assessment: Governance of the Energy Union**

Briefing by Vadim Kononenko, EPRS, February 2017

**Types of instruments to support renewable energy, EEA-32, 2012 – More in the Graphics Warehouse**

![Types of instruments to support renewable energy graph](source: EEA Technical Report No 21/2014, page 18.)
