Tax Incentives for Energy Efficiency in Germany

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Objectives

- **Present principal tools and starting points for tax incentives to support energy efficiency in Germany**
- **Evaluation / Pros & Cons**

Tax Incentives for Energy Efficiency in Selected EU Member States

Country	Designation	Connection point	Action	Tax debtor	Function	Tax type
France	Crédit d'impôt transition énergétique (CITE)	Tax credit (tax liability)	Materials and equipment to limit energy consumption and greenhouse gas emissions (list of equipment and materials - Code Général des Impôts)	Natural entities – landlords and leaseholders (main residence)	Tax credit of 30 % of the renovation costs (in the limit of 8,000 EUR for a single, 16,000 EUR for a couple and 400 EUR in addition per dependent for a 5-year period)	Personal income tax
	Relief from property tax on existing buildings (TFPB)	Tax relief (tax liability)	Energy saving work in accordance with the Thermal Regulation	Low-income social housing organi-sations or semi-public estate companies	Tax relief equal to 1/4 of the expenses incurred during the year	Property tax
Ireland	Accelerated Capital Allowance for Energy Efficiency Equipment (ACA)	Taxable base	Eligible products (over 10,000) are listed on the Triple E Register	Companies	Full deduction of equipment costs from taxable profit	Reduction of company's taxable income (notably corporation tax)
Italy	Detrazione fiscale „65 %"	Tax relief (tax liability)	Actions to improve energy efficiency of existing buildings	Natural persons / companies	65 % tax deduction based on the investment costs	Personal income tax / corporate tax

Tax Incentives for Energy Efficiency in Selected EU Member States

Country	Designation	Connection point	Action	Tax debtor	Function	Tax type
Netherlands	Energie-investeringsaftrek (EIA)	Taxable base	Purchase of designated energy efficient equipment and equipment for the generation of renewable energy	Companies	Deduction of 58 % of the investment amount for taxable profit	Income tax / corporate tax
	Milieu-investeringsaftrek (MIA)	Taxable base	Over 300 items of investments or capital assets on the Milieulijst (Environmental List)	Companies	Deduction of 36 % of investment costs for an environmentally friendly investment from fiscal profit	Income tax / corporate tax
	Willekeurige afschrijving milieu-investeringen (Vamil)	Taxable base	Over 300 items of investments or capital assets on the Milieulijst (Environmental List)	Companies	Voluntary depreciation of 75 % on environmental investment (self-determined timing)	Income tax / corporate tax
UK	Enhanced Capital Allowance (ECA)	Taxable base	Qualifying energy efficient equipment (19,000 pro-ducts) listed on the Energy Technology List (ETL)	Companies	100 % tax relief on qualifying energy efficiency expenditure in the tax year	Reduction of company‘s taxable income (notably corporation tax)
	Reduction in VAT Rate for Energy Efficiency Materials	Tax rate	Installation of energy-saving materials and heating equipment in residential accommo-dations or buildings used solely for charitable purposes	General	Reduced rate of 5 % VAT	Value added tax

Cf. Slide 21 – Effectiveness of tax incentives for energy efficiency
Status: UK – 2015; Netherlands – 2016

Conclusion

- The provided tax incentives for energy efficiency show a heterogeneous spectrum and are subject to constant change
- There is no unified orientation regarding the design of the tax incentives to support energy efficiency
- Some countries have a long experience in the field of tax incentives to support energy efficiency, whereas other countries do not use such instruments

Germany[1]

The promotion of energy efficiency for companies and private households in Germany is primarily based on regulatory prescriptions (Act on Energy Services and Further Energy Efficiency Measures, Act to Promote Energy Savings in Buildings etc.) and public financial aids (KfW Energy Efficiency Programmes – Production Facilities and Process, SME innovative: Resources and Energy Efficiency etc.).

<u>Analysis of the funding database (Search criteria – See slides 23 & 24)</u>

States (Länder)

- 148 measures such as grants, soft loans or guarantees*

Federal Government

- 67 measures such as grants and soft loans etc.*
  - More than 20 measures provided by the KfW

- More than two-thirds of 215 financial aids in the field of energy efficiency and renewable energy represent investment grants*
- Investment grant (Investitionszuschuss): Direct State support which is liable to taxation; in contrast to an investment premium (Investitionszulage), which is not liable to taxation[2]
- The taxable person is given the possibility to account the investment grant directly as operational income or to offset it with the acquisition or production costs[3]

* Status: July 5, 2016

Source: [1] Own research based on Bundesministerium für Wirtschaft und Energie (2016): Förderdatenbank – Förderprogramme und Finanzhilfen des Bundes, der Länder und der EU, Database, Status July 5, 2016 | [2] Riedel (1993): Investitionsförderung mittelständischer Unternehmen in strukturell schwachen Regionen | [3] Scheffler (2013): Besteuerung von Unternehmen III - Steuerplanung

Investment deduction and tax reduction within the German Income Tax Act (EStG)[1]

In general, there are no explicit and systematic tax advantages for energy efficiency in Germany.[*] The promotion of energy efficiency in Germany is based on regulatory prescriptions and public financial aids. However, with Sec. 7g EStG the German Income Tax Act provides a general investment incentive for SMEs.

Investment deduction for SMEs (Section 7g EStG)

- Profit-reducing expenses in the amount of up to **40 %** of the expected acquisition or production cost, **before an investment** (Sec. 7g subs. 1 clause 1 EStG)
- In addition, **special depreciation** may be used, in the amount of up to **20 %** of the acquisition or production cost in this year and the following four years (Sec. 7g subs. 5 EStG)

➡ This is not a special environmental policy measure.

Source: [1] Einkommensteuergesetz in der Fassung der Bekanntmachung vom 8. Oktober 2009 (BGBl. I S. 3366, 3862), das durch Artikel 7 des Gesetzes vom 31. Juli 2016 (BGBl. I S. 1914) geändert worden ist

* It should be noted that there are a few energy efficiency related exemptions from the energy and electricity taxes (e. g. Sec. 53a German Electricity Tax Act).

Improvement of energy efficiency in Germany

The current form of energy efficiency funding in Germany is characterised by a high level of complexity.

By oneself, the funding catalogue of the Federal Government provides information about more than 110,000 completed or on-going initiatives of project promotion with respective to the relevant federal ministries.

- The lack of clarity causes significant financial costs because of the retrieval / adaption to find a suitable project promotion – particularly for private households and SMEs
- Frequent changes of policy targets and project promotions by the German Federal Government and the regional state (Länder) governments
- Provided aid money is not fully retrieved
- The management of the different project promotions is accompanied by comprehensive administrative costs

➡ Elimination by tax incentives

Financial Support and Tax Advantages

Justified due to a market failure or allocation aspects.[1] State intervention always requires particular criteria.[2] Tax incentives for German energy and climate protection policy only if the following requirements are met.[3]

Overall economic requirements[3]

- Loss of tax revenue and procedural costs should be covered by the macroeconomic benefits (welfare gain)
- Procedural costs can be reduced by:[3]
  - Simplicity
  - Transparency
- The national legislature should design a consistent and clear framework to increase planning security of eligible companies and households[5]

Tax-system requirements[3]

The introduction of an investment support measure leads to an initial burden of the State budget, therefore countermeasures by the State, in the form of spending cuts or tax increases, have to be implemented.[4]

Governmental budget control[3]

- Quantifying the reduction in tax revenue on a statistical basis[2]
- Regular monitoring of the success and the sustainability (impact assessment)[2]
- Evaluation: Methods of investment analysis (e. g. net present value method) or methods which are oriented towards the tax burden

EU aid rule requirements[3]

- Particular relevant regarding article 49 TFEU and article 56 TFEU (Consolidated Version of the Treaty on the Functioning of the European Union, OJ C326, October 26, 2012)

Source: [1] Spengel/Wiegard (2011): Steuerliche Anreize für Forschung und Entwicklung | [2] Bundesministerium der Finanzen (2015): 25. Subventionsbericht | [3] Herbold (2009): Steuerliche Anreize für Forschung und Entwicklung im internationalen Vergleich | [4] Kosonen/Nicodème (2009): The Role of Fiscal Instruments in Environmental Policy | [5] OECD (n. d.): Tax Incentives for Research and Development – Trends and Issues

Formulation in Germany

The drafted bill regarding the support of electrical vehicles, submitted by the German Bundesrat in 2015, provided a favouring on the tax base using a special depreciation.[1]

Favouring on tax base

+	−
• Laid down in German tax law **(cf. Sec. 7g Subs. 5 EStG)** • Capable of being integrated without significant distortions[3]	• Solely advantages in interests and liquidity[2] • Depends on the success of the company[2] • Possibly depends on the personal tax rate[3]

Reduction of tax liabilities

+	−
• High transparency and predictability[2] • Also for private households[3] • Reduction of the tax liability[3]	• Depends on proprietary obligations within a government-taxpayer relationship[2]

Source: [1] Gesetzentwurf des Bundesrates vom 10.07.2015: Entwurf eines Gesetzes zur steuerlichen Förderung der Elektromobilität, Drucksache 114/15 | [2] Spengel/Elschner (2010): Steuerliche Anreize für Forschung und Entwicklung | [3] Herbold (2009): Steuerliche Anreize für Forschung und Entwicklung im internationalen Vergleich

Tax Incentives for Energy Efficiency – Evaluation

Direct promotion

- Investment grants
- Soft Loans

Indirect promotion

- Tax incentives

Easy controllability and predictability (national budget)[2]

Comprehen-sive steering possibility[2]

Irrelevance of information deficits[1]

Lower barriers[1]

Less selectivity[2]

Lower admini-strative burden[2]

Risk of windfall gain[2]

Due to permanent granted subsidies, the market economy competition is distorted.[3]

Source: [1] Spengel/Elschner (2010): Steuerliche Anreize für Forschung und Entwicklung | [2] Herbold (2009): Steuerliche Anreize für Forschung und Entwicklung im internationalen Vergleich | [3] Bundesministerium der Finanzen (2003): Die Förderung des Umweltschutzes im deutschen Abgabenrecht – Einschließlich der ökologischen Steuer- und Finanzreform

Conclusion

Nevertheless, national financial aids cannot be completely replaced by tax incentives due to their weaknesses.

- Germany has committed itself ambitious climate protection targets
- In order to fulfil the political objectives, it is necessary to put in place specific measures to promote energy efficiency
- The combination of market-based offers and indirect support measures in the form of tax benefits can make a significant contribution to meeting the climate protection targets
- The promotion of energy efficiency for companies and private households in Germany is primarily based on regulatory prescriptions and public financial aids
- In contrast to direct support measures (grants and soft loans etc.), tax incentives provide a more general promotion (Breitenförderung)
- The drafting process of tax incentives to support energy efficiency in Germany must take the following four aspects into account: Overall economic requirements, tax-system requirements, governmental budget control and EU aid rule requirements
- Neither direct nor indirect support measures are eligible in order to attain the climate protection targets by themselves
- A mix of direct and indirect support measures should be integrated into the market
- The integration should be achieved in a sustainable manner, including a progressive reduction of the provided support measures in accordance with the accomplished goals

Contact Information

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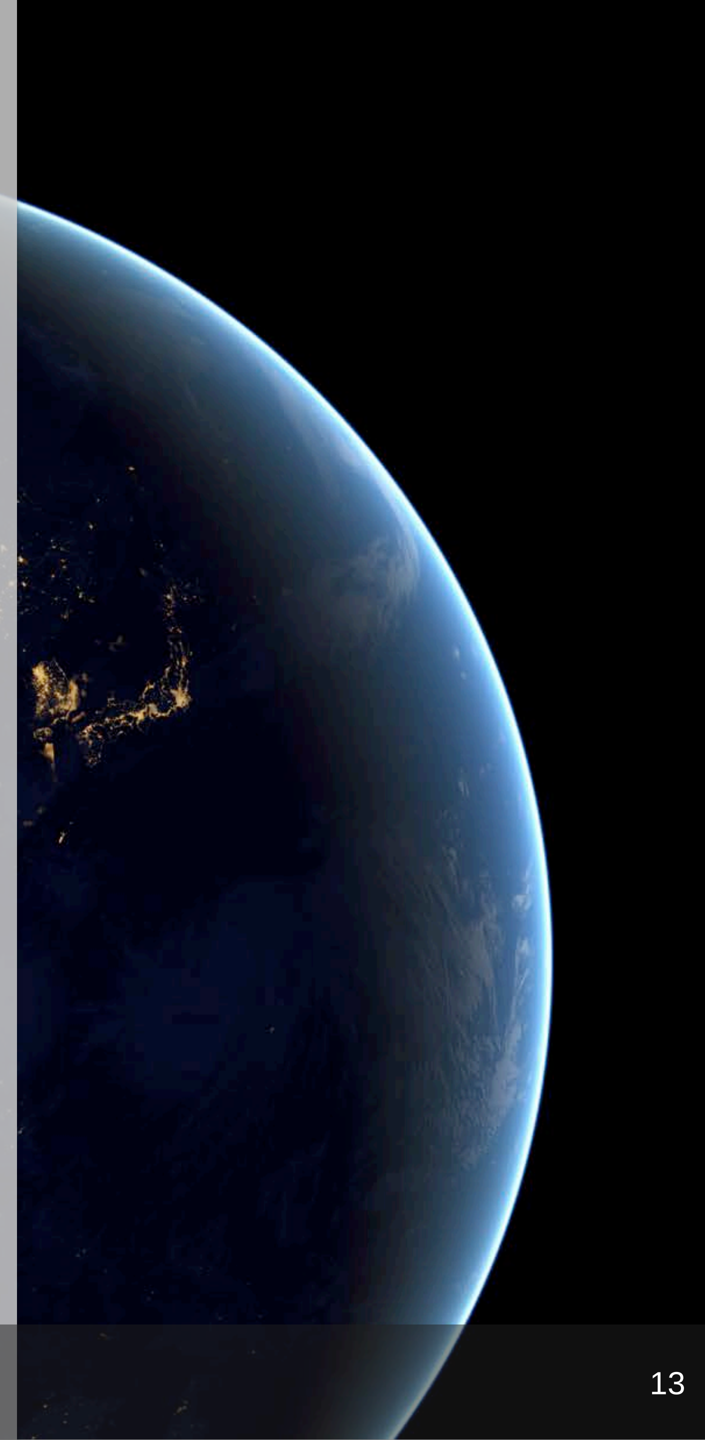


Backup

Tax Incentives for Energy Efficiency in Germany

- **Background**
- **Objectives of the German Energy and Climate Policy**
- **Barriers of the European Energy and Climate Policy**
- **Characteristics of the German Energy and Electricity Tax Law**
- **Tax Incentives for Energy Efficiency in South Africa**
- **Tax Incentives for Energy Efficiency in Selected EU Member States**

Background

Geopolitical conflicts and crises in the Middle East and North Africa. Technical and economical influences throughout the EU, including debates on the promotion of shale gas or the construction of liquefied gas terminals.

Overall Challenges

Energy demand: Global increase of one third until 2040[1]

Import cost of pan-European power demand in excess of 400 billion € per annum[2]

World Bank: Increase of nominal Crude Oil Price from 43 $/bbl (2016) to 82.6 $/bbl (2025)[3]

Source: [1] International Energy Agency (2015): World Energy Outlook 2015 | [2] Energy Efficiency Financial Institutions Group (2015): Energy Efficiency – the first fuel for the EU Economy – How to drive new finance for energy efficiency investments | [3] World Bank (2016): World Bank Commodities Price Forecast

Germany’s Energy Concept

Additional to the European goals for climate change

1 million registered electrical vehicles by 2020[1]

Heat requirements of buldings:[1]
- 20 % by 2020
- 80 % by 2050

Greenhouse gas emmission:[1]
- 40 % by 2020
- 80-95 % by 2050
Below 1990 levels

Primary energy consumption:[1]
- 20 % by 2020
- 50 % by 2050
Below 2008 levels

20-20-20 goals of the EU:[2]

- **20 %** greenhouse gas emission
+ **20 %** renewable energies
+ **20 %** energy efficiency

2030 framework for European climate and energy policies:[3]

- **40 %** greenhouse gas emission
+ **27 %** renewable energies
+ **27 %** energy efficiency

2050 low-carbon economy:[4]

- **80 %** greenhouse gas emission

Milestones: - 40 % (2030)
- 60 % (2040)

In **all** sectors

Source: [1] Bundesministerium für Wirtschaft und Technologie/Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (2010): Energiekonzept für eine umweltschonende, zuverlässige und bezahlbare Energieversorgung I [2] European Commission (2016 a): 2020 climate & energy package I [3] European Commission (2016 b): 2030 climate & energy framework I [4] European Commission (2016 c): 2050 low-carbon economy

Investment Climate

In addition to the target of price stability, indicated in Article 127 (1) TFEU, the ESCB can support the general economic policies in the European Community by taking appropriate measures.[1]

2000-2008

Main Refinancing Operations (Fixed Rate)
4.25 %[2]

Since 2008

Main Refinancing Operations (Fixed Rate)
3.75 – 0.05 %[2]

Today

Main Refinancing Operations (Fixed Rate)
0.00 %[2]

Source: [1] The Treaty on the Functioning of the European Union (Consolidated Version), OJ C 326, October 26, 2012 | [2] Deutsche Bundesbank (2016): EZB-Zinssätze

Jungle of Funding

The barriers are in particular relevant for SMEs.[1]

Barriers of Implementation:[2]

- Limited capex budgets
- Commitment of a short payback period
- Lack of specialist knowledge and experience of those responsible
- Unclear responsibilities within an enterprise

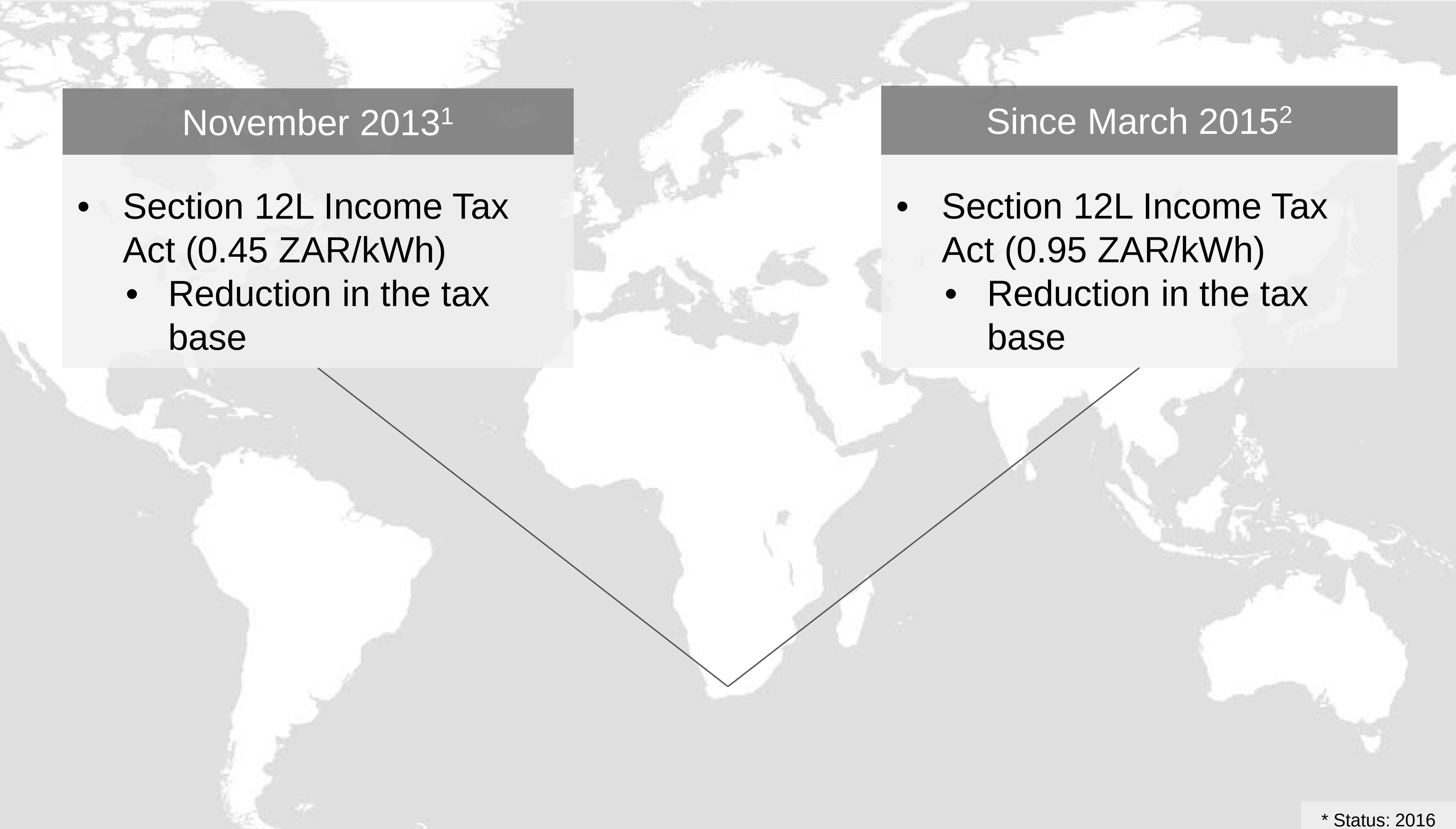
Source: [1] Prognos AG (2010): Rolle und Bedeutung von Energieeffizienz und Energiedienstleistungen in KMU | [2] Reichmuth (2015): Bilanzneutrale Finanzierung von Energieeffizienzmaßnahmen

Legislature’s aim within the ecological tax reform

- Increase of energy prices, for setting incentives to exploit existing energy-saving potentials[1]
- Support the development of energy-saving products and production processes[1]
- Increase of the use of renewable energies[1]
- Beyond the environment policy interests, the Energy and Electricity Tax Law also pursue fiscal purposes[2]

Source: [1] Gesetzentwurf der Fraktionen SPD und Bündnis 90/Die Grünen v. 17.11.1998: Entwurf eines Gesetzes zum Einstieg in die ökologische Steuerreform | [2] Trottmann (2011): Energie- und Stromsteuerrecht – der wirtschaftliche und rechtliche Rahmen

South Africa



November 2013[1]

- Section 12L Income Tax Act (0.45 ZAR/kWh)
  - Reduction in the tax base

Since March 2015[2]

- Section 12L Income Tax Act (0.95 ZAR/kWh)
  - Reduction in the tax base

* Status: 2016

Source: [1] South African National Energy Development Institute (2014): 12L Energy Efficiency Tax Incentive – Frequently Asked Questions | [2] South African National Energy Development Institute (2016): It's Official – Energy Efficiency tax rebate increased to 95 c/kWh!, Media Release

Effectiveness of tax incentives for energy efficiency

France

According to an analyses of the French General Direction for Energy and Climate (DGEC) 1.08 Mtoe of final energy would be saved by 2020, thanks to the credit tax measure (CITE).[1]

Italy

Using a tax credit, the primary energy consumption was reduced by 13.12 percent in 2013. Based on the same incentive, the final energy savings increased by 15 percent in 2013.[2]

Netherlands

Between 2001 and 2010 green projects, supported by the Green Fund Scheme as well as other tax and grant program-mes, led to an annually decrease in CO_2-emissions of 0.5 Mtoe on an average basis.[3]

Source: [1] MURE II/ADEME (2015): FRA 7 Energy Transition Tax Credit | [2] European Commission (2014 b): Italian Energy Efficiency Action Plan; Ministero dello Sviluppo Economico (2015): Annual Report on Energy Efficiency | [3] Rijksdienst voor Ondernemend Nederland (2010): The Green Funds Scheme

Sources – Slides 3 & 4

- Department of Communication, Energy and Natural Resources (2014): National Energy Efficiency Action Plan 2014
- Department of Energy and Climate Change (2014): UK National Energy Efficiency Action Plan
- European Commission (2014 a): Third National Energy Efficiency Action Plan for the Netherlands
- European Commission (2014 b): Italian Energy Efficiency Action Plan
- European Commission (2016): 2016 Annual Report on Energy Efficiency in the Netherlands
- HM Revenue and Customs (2015): VAT – Changes to the reduced rate for energy saving materials
- Ministère de l‘Écologie, du Développement durable et de l‘Énergie (2014): Energy efficiency action plan for France – 2014
- Ministère de l‘Écologie, du Développement durable et de l‘Énergie (2015): Energy Transition for Green Growth Act
- Ministero dello Sviluppo Economico (2015): Annual Report on Energy Efficiency
- MURE II/Ricardo-AEA (2013): UK 3 – Reduction in VAT Rate for Energy Saving Materials
- MURE II/ADEME (2015): FRA 7 Energy Transition Tax Credit
- Rijksdienst voor Ondernemend Nederland (n. d.): MIA (Environmental Investment Rebate) and Vamil (Arbitrary depreciation of environmental investments)
- Rijksdienst voor Ondernemend Nederland (2010): The Green Funds Scheme
- Rijksdienst voor Ondernemend Nederland (2014): Tax relief schemes for environmentally friendly investment (Vamil and MIA)
- Sustainable Energy Authority of Ireland (n. d.): How the ACA works

Structure of the funding database – Options

- URL: http://www.foerderdatenbank.de
- Funding authority: Federal Government, States (Länder)
- Territory: States (Baden-Württemberg, Bavaria, Berlin, Brandenburg, Bremen, Hamburg, Hesse, Lower Saxony, Mecklenburg-Vorpommern, North Rhine-Westphalia, Rhineland-Palatinate, Saarland, Saxony, Saxony-Anhalt, Schleswig-Holstein, Thuringia)
- Persons eligible for funding: Entrepreneurs, companies, education institution, research institute, university, municipality, public body, private individual, association
- Funding area: Business start-up & consolidation, corporate finance, work, training and development, foreign trade, consultation, energy efficiency & renewable energies, research & innovation (generic / thematic), health & social issues, infrastructure, culture, media & sport, agriculture rural development, trade fairs & exhibitions, regional aid, urban development & urban renewal, environmental protection & nature conservation, residential construction & home improvements
- Promotion programmes: Investment grant, (soft) loan, guarantee (Bürgschaft), participation, assurance (Garantie)

Structure of the funding database – Applied search criteria

- Funding authority: Federal Government, States (Länder)
- Territory: All
- Persons eligible for funding: All
- Funding area: Energy efficiency & renewable energies
- Promotion programmes: All