



Lomonosov Moscow State University  
Business School

# Global Limits of Economic Growth

*Lomonosov Moscow State University,  
Inter-Departmental Course, 2023-2024, Spring Fall*

*Course Reader:*

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# Requirements to Pass the Course

- 1) At least 50% of sessions are attended (6/12)
- 2) At least 60% points for the final course test
- 3) Individual Project (Presentation) is done properly and delivered in time

# General Scheme for Resource Limitations Analysis



## Scheme for the Individual Project (1-2 students per 1 project)

Resources	Steps of Analysis					
	Step 1	Step 2			Step 3	Step 4
	Role/ Importance	Limitations produced for			Ways used to overcome existing limitations	Suggestions how to improve these ways of coping with limitations
World economy		National economy	Industries/ Business			
<b>Unique Resource or Problem selected by you</b> <b>Scale: world or a country or an industry</b>	...	...	...	...	...	...

## ***“Global Limits of Economic Growth”***

*2023/2024 academic year, spring semester*

**Module Teacher:** [Evgeniya Anatolyevna Shvets, Ph.D.](#)

**Module teacher’s contact details:** [e.shvets.mgubs@gmail.com](mailto:e.shvets.mgubs@gmail.com), also available for consultations on the day of sessions.

### **Guidelines for Individual Projects**

- ✓ Individual Projects can be made by 1 or 2 students.
- ✓ The electronic final version of the presentation should be sent to the teacher. The last day to do it is the last day of the course when there is a final test. Follow this information from Administration announcements at your personal accounts.

### **Country or Industry Analysis of Economic Growth Limitations**

#### **I. Presentation parameters**

- Up to 6-10 slides of Power Point Presentation or up to 2 pages A4 of Word. Better to deliver it in PDF format.
- First slide: title of the project, course title, your name, your department
- Make all necessary references and quotes
- Illustrate your presentations with statistical data, diagrams, schemes or pictures

#### **II. Defining a country and resources for the presentation**

- Each student (or 2) selects **one country for the analysis** taking into consideration teacher recommendations. Countries should not be repeated among students.
- For the country selected a group defines **4 types of natural resources representing the greatest interest and priority for the country**. The resources types include the following: Ecology, Climate, Energy, Population, Land Use, Agriculture, Food Production, Water and other types of natural resources that were not covered by the course.
- **Put the list of your resource priorities in terms of business growth limitations in accordance with priorities of UN Development Sustainable Goals (DSG) for the specific country/industry.** (<http://www.un.org/sustainabledevelopment/sustainable-development-goals/>).

### III. General Presentation Scheme

#	Resources	Steps of Analysis			
		Step 1	Step 2	Step 3	Step 4
		Importance of the resource for a country/industry	Limitations produced	Ways used to overcome existing limitations	Your suggestions how to improve the situation
Resource ...	...	...	...	...	

### IV. Steps of Analysis for Each Resource Type

**Step 1:** An economic role/importance of the resource in the economy of the country (... is a unique type of resource for the country because it provides ... (% GDP, % of industrial output ...). Try to find something peculiar about this kind of resource for your country, compare it with the situation of neighbor countries or international standards whether it's appropriate.

**Step 2:** Different kind of limitations (problems, risks) that are produced or can be produced by these resources on a national level and on a level of different industries that limit economic growth.

**Step 3:** Ways how countries are overcoming these limitations (public policy: laws, measures, special instruments, regulation forms, what is reflected in different kind of strategies; adaptation or mitigation schemes, risk management).

**Step 4:** Your suggestions/recommendations how the current country policy about overcoming resources limitations can be improved (see successful stories of other countries and international experience to formulate your suggestions).

### V. Suggestions about resources description

- Ecology** (*suggestions:* find some key-information about the ecological situation of the country, pollution level, main sources of pollution, ecological policy, special ecological standards in this country, any ecological ratings in which the country was participating, ecological footprint of the country, ecological catastrophes/disasters on its territory if any, damage evaluation, what was done by the government and companies to minimize this damage, etc.).

Useful links:

- <http://beta.worldbank.org/climatechange/>
- [www.footprintnetwork.org](http://www.footprintnetwork.org)
- [www.wri.org/publications/ecosystems](http://www.wri.org/publications/ecosystems)
- <http://www.carbonfootprint.com>
- <http://www.un.org/sustainabledevelopment/sustainable-development-goals>

- Climate** (*suggestions:* show country's position towards Paris Agreement, participation in CO<sub>2</sub>-trade, what are recent negative and positive impacts of climate change on economy and on certain industries, examples of business climate adaptation/mitigation strategies)

Useful links:

- <http://beta.worldbank.org/climatechange/>
- [http://unfccc.int/kvoto\\_protocol/items/2830.php](http://unfccc.int/kvoto_protocol/items/2830.php)
- <http://www.un.org/sustainabledevelopment/sustainable-development-goals>

- Energy** (*suggestions:* identify main energy sources for the country; show energy balance for the country using data from the latest *BP Statistical Review of World Energy*; ratios of production to reserves, consumption to imports; energy consumption, energy production, energy dependence, energy crises (if any), energy policy, energy saving and energy efficiency measures adopted in the country).

Useful links:

- [www.bp.com](http://www.bp.com) (see Statistical Review of World Energy)
- [www.eia.doe.gov](http://www.eia.doe.gov) (U.S. Energy Information Administration)
- [www.iea.org](http://www.iea.org) (International Energy Agency)
- <http://www.un.org/sustainabledevelopment/sustainable-development-goals>

- Population** (*suggestions:* general overview of a population as an economic factor, labor market situation, migration problems, labor mobility, ageing of economically active population, nationality pattern, public health, role of cities in the national economy, etc.).

Useful links:

- [www.ilo.org](http://www.ilo.org) (International Labour Organization)
- [www.un.org/popin/](http://www.un.org/popin/) (UN Population Information Network)
- [www.gapminder.org](http://www.gapminder.org) (tool similar to WB Data Visualizer)
- <http://www.un.org/sustainabledevelopment/sustainable-development-goals>
- <http://www.postcarbon.org/>

- Land Use, Agriculture, Food Production** (*suggestions:* production and import of agriculture food, food security/insecurity level, problem of GMF (if any), use of fertilizers, soil resources, food crises (if any)).

Useful links:

- [www.fao.org](http://www.fao.org)
- [http://www.fao.org/ag/agn/nutrition/profiles\\_en.stm](http://www.fao.org/ag/agn/nutrition/profiles_en.stm)
- [http://www.fao.org/unfao/govbodies/cfs/country\\_en.htm](http://www.fao.org/unfao/govbodies/cfs/country_en.htm)
- <http://www.fao.org/hunger/en/>
- <http://www.un.org/sustainabledevelopment/sustainable-development-goals>
- <http://www.postcarbon.org/>

- Water** (*suggestions:* focus on water resources, water use by sectors, water management, water price for different consumers, etc.).

Useful links:

- <http://www.unwater.org/flashindex.html>
- <http://www.fao.org/nr/water/aquastat/main/index.stm> (and other statistics from this website)
- <http://www.un.org/sustainabledevelopment/sustainable-development-goals>

- Other types of natural resources**

Consult relevant links from the general list of recommended web-sites.

For all resources it is recommended to review documents, publications, regional outlooks/overviews and country profiles of the general list of recommended web-sites.

# Learning Schedule

- Our classes will take place on Wednesdays at 15:00 for 3 months (12 weeks)
- Communication with the course reader:
  - During classes
  - Via e-mail
  - All administrative issues should be addressed via **your Personal Account in the MSU Learning Management System**
- Before each session you will receive **Pre-Reading and Food-for-Thought Assignment** through your Personal Account




## Pre-Reading and Food-for-Thought Assignment before Sessions 4a,4b (March,20)

*Files for pre-reading are available in corresponding folders of the course in Microsoft Teams*

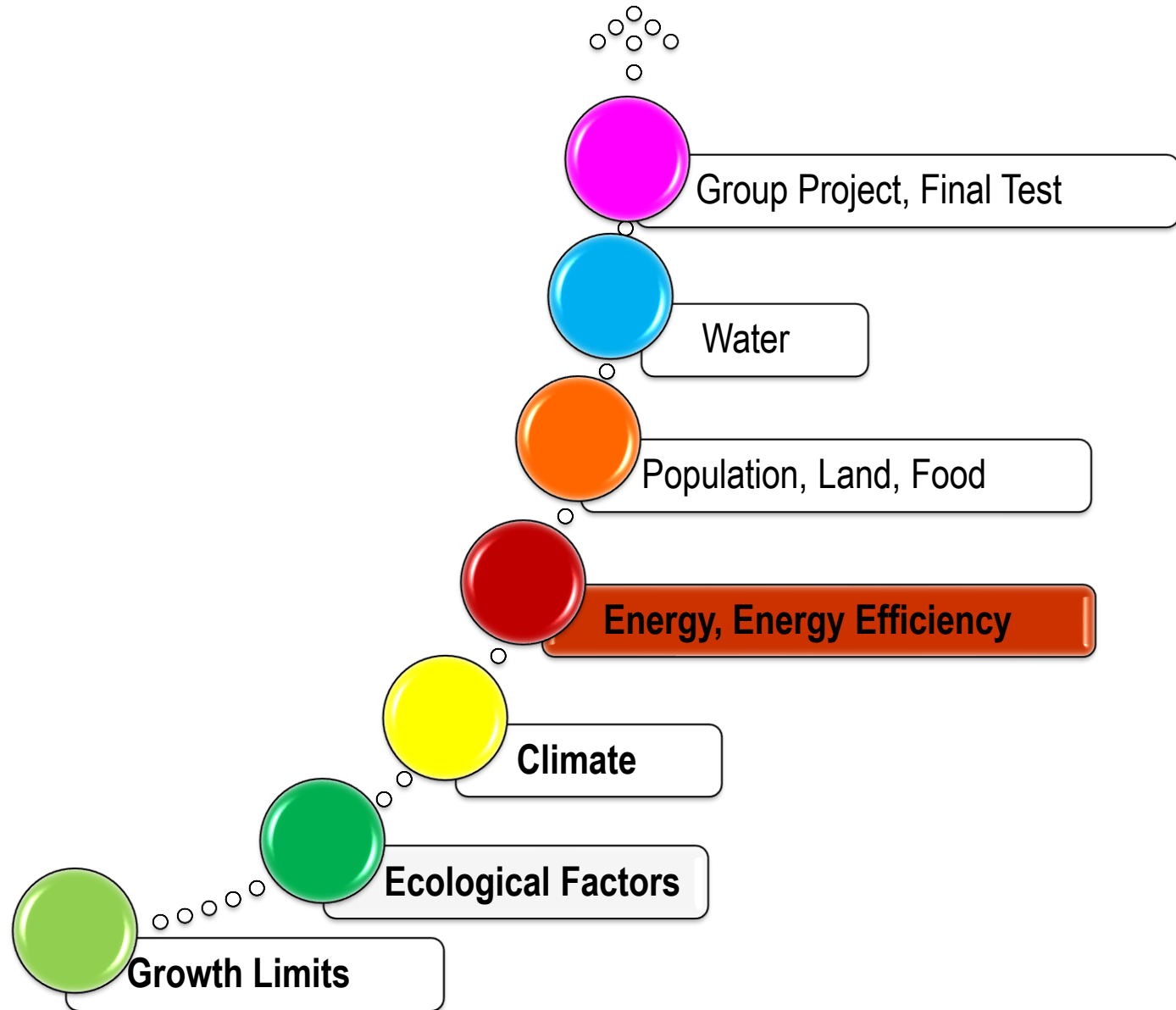
### ENERGY EFFICIENCY & ENERGY SAVING PROGRAMS

- Familiarize with websites [www.ecolabel.eu](http://www.ecolabel.eu) and [www.energystar.gov](http://www.energystar.gov).

#### Think about:

1. What are the goals, measures and instruments used in each of these programs?
  2. How the efficiency of these programs can be evaluated?
  3. Should such programs be obligatory or voluntary in your opinion?
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# Course Route





**Session 7**

**Energy Security**

**Energy Efficiency & Energy Saving**

**2024**

# The Aims of the Session 7

1. To understand the causes of energy security problems and scope of them
2. To understand the origins of energy efficiency programs
3. To know different types of energy efficiency programs and their instruments
4. To be able to calculate basic economic benefits in the field of energy saving

## 1. Energy Politics, Energy Security Problem

- International Energy Conflicts
- Role of Multinationals Companies and Governments
- Types of Energy Crises

## 2. Origins of Energy Saving

## 3. Governmental Energy Efficiency Programs

- Energy Revolution in Cuba
- US Energy Star Program
- EU Ecolabel

Energy Conflicts,  
Energy Crises,  
Energy Security

Discussion of the abstract from Perkins J. “Confessions of an Economic Hit Man” (Chapter 33, pp.196-202)

Questions for discussion:

1. What was the degree of Venezuelan economy oil dependence?
2. Analyze first government instruments that were used when Chavez came into power? Were they efficient?
3. What were positive and negative social and economic effects of oil dependence for Venezuela at different times?
4. How was the energy security understood by Chavez government and by multinational companies?

# Oil in Falklands: Argentina, the UK and Falklands

- The war between Argentina and the UK over the islands was started in 1982 (history goes back to 1833)
- Exploratory wells were drilled off the Falklands in 1998. Results: there might be oil, further exploration was not then seen as profitable.
- Tension increased because:
  - Argentina's output of oil and gas has fallen in 2000-s .
  - Since the war, income per head in the once-poor islands has substantially overhauled that in Argentina: while the Falklands have grown rich on squid, Argentina's long decline has continued.




Source: *The Economist*

# Energy Security Problem

- Threats to energy security (Risk Factors):
  - Increase in energy prices
  - The political instability of energy producing countries
  - The manipulation of energy supplies
  - The competition over energy sources
  - Attacks on supply infrastructure
  - Accidents and natural disasters
  - Terrorism and warfare

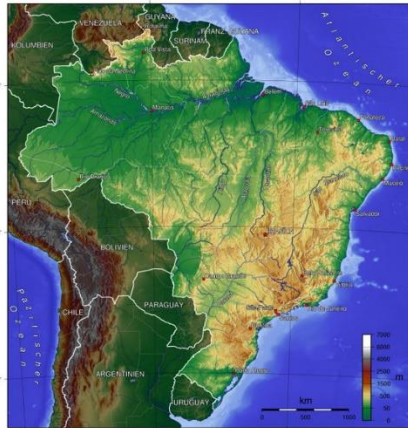
# Energy Security Problem

- National energy security policies: new goals
- Energy crises  Energy security problem

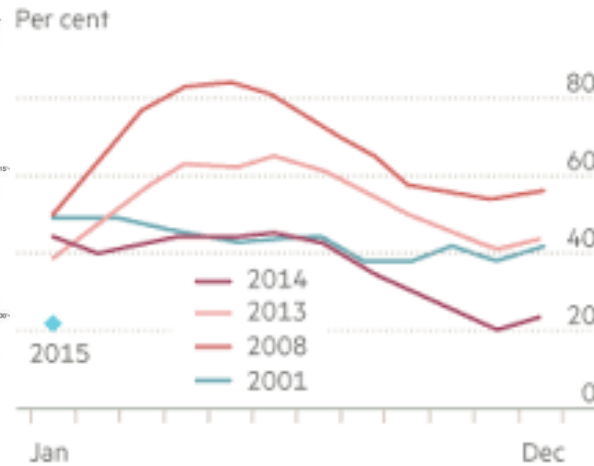


# Brazil Energy Crisis

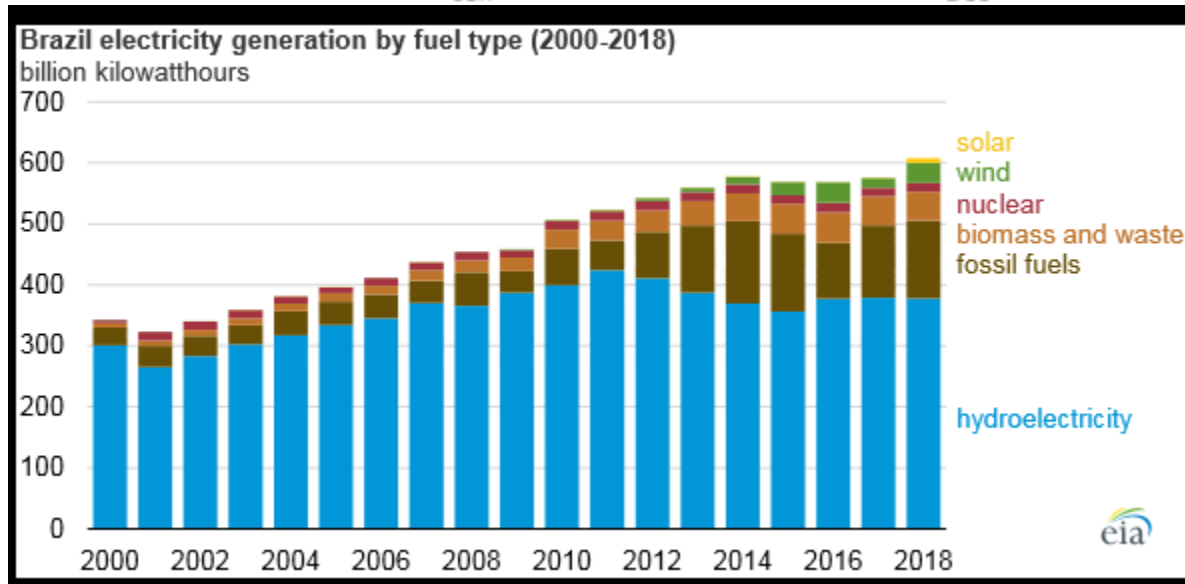
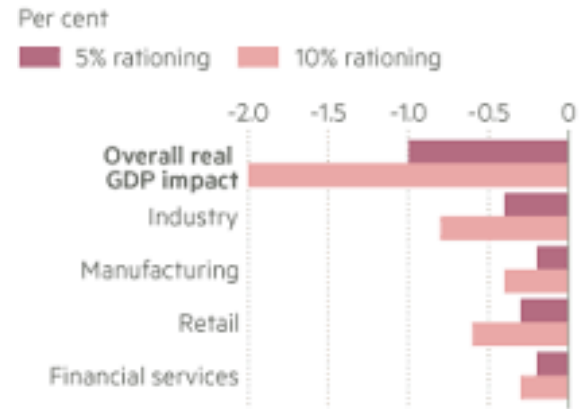
- Electricity generation crisis in 2001



Brazilian reservoir levels



Water rationing impact on Brazil's real GDP growth



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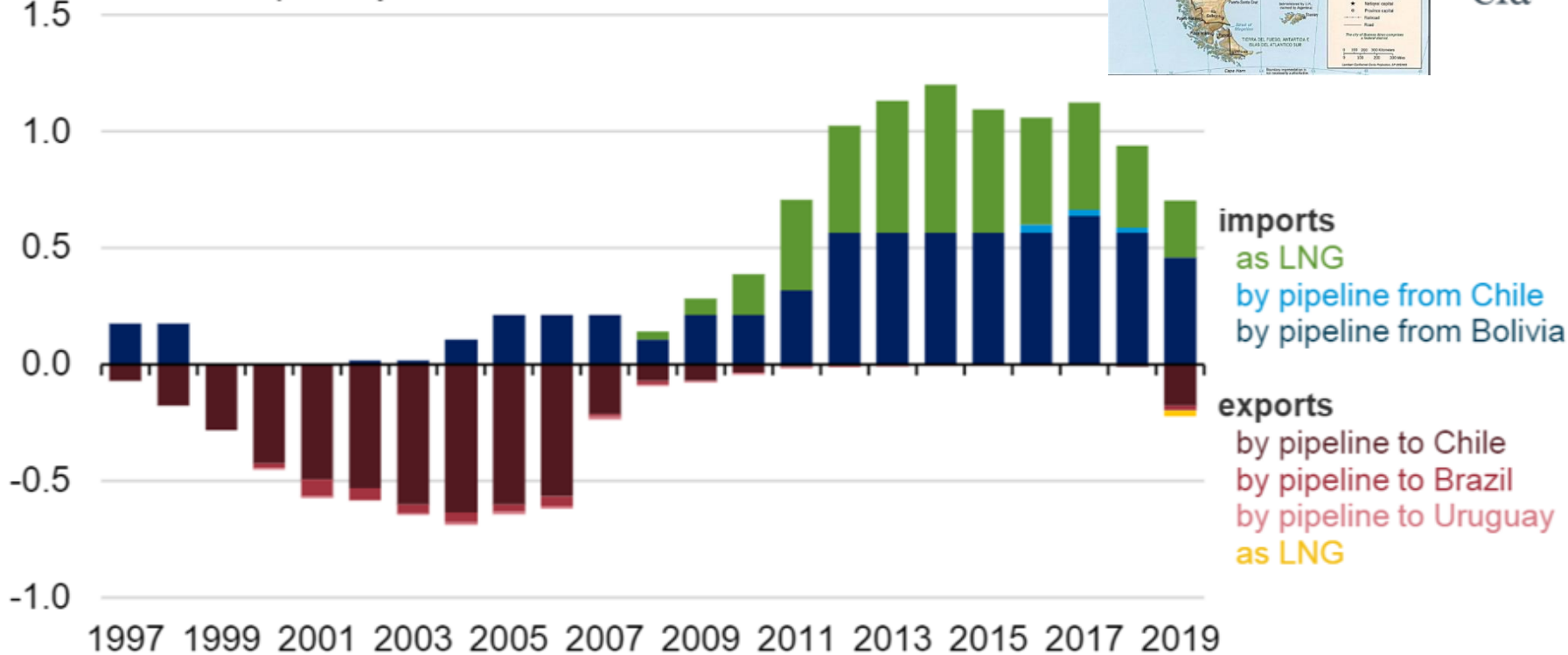


# Argentina Energy Crisis



## Argentina natural gas trade (1997-2019)

billion cubic feet per day

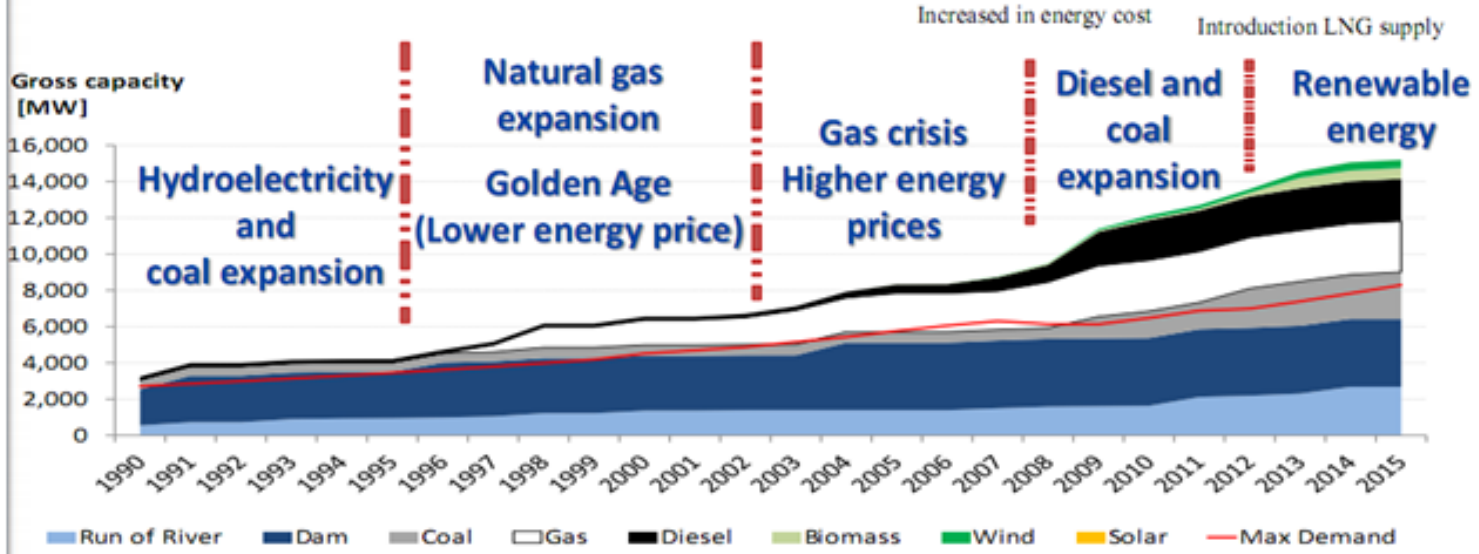
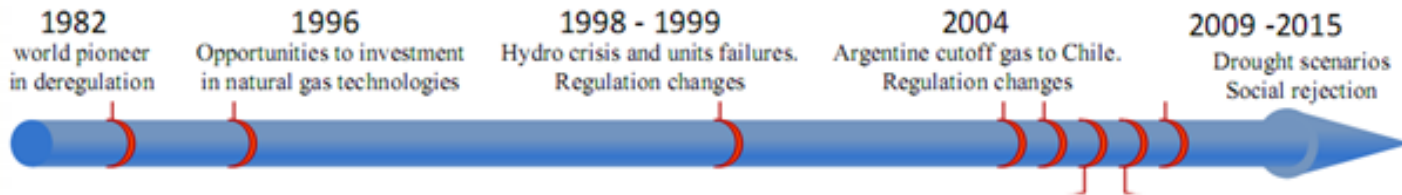


Source: U.S. Energy Information Administration, based on [Secretaría de Gobierno de Energía de Argentina](#) (April 2019)

# Chile Energy Crisis



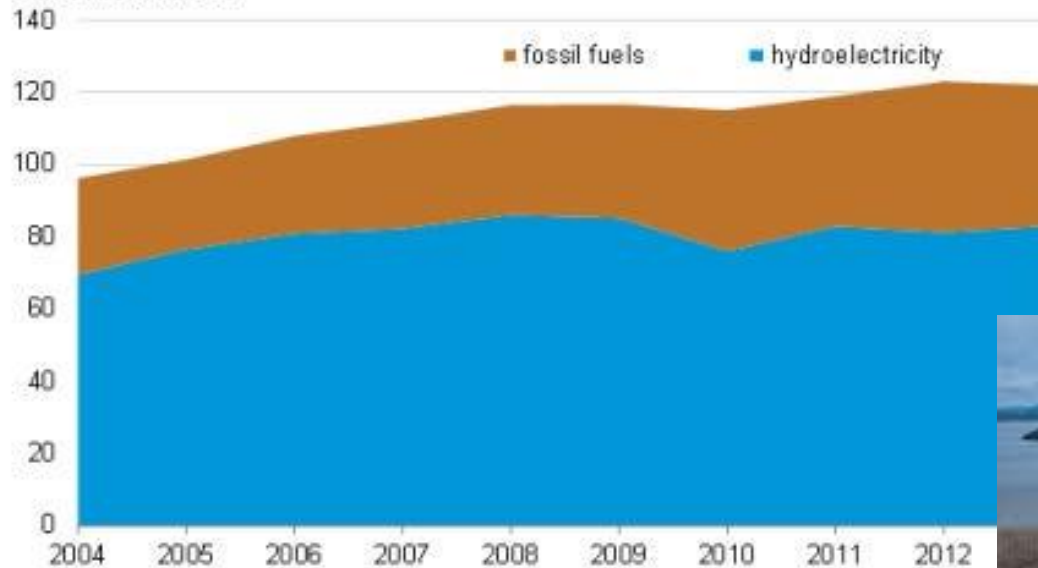
## Milestones in the Chilean electricity system



# Venezuela Energy Crisis

- Electricity generation crisis in 2010

Figure 8. Venezuela electricity generation by source  
billion kilowatthours



Source: U.S. Energy Information Administration

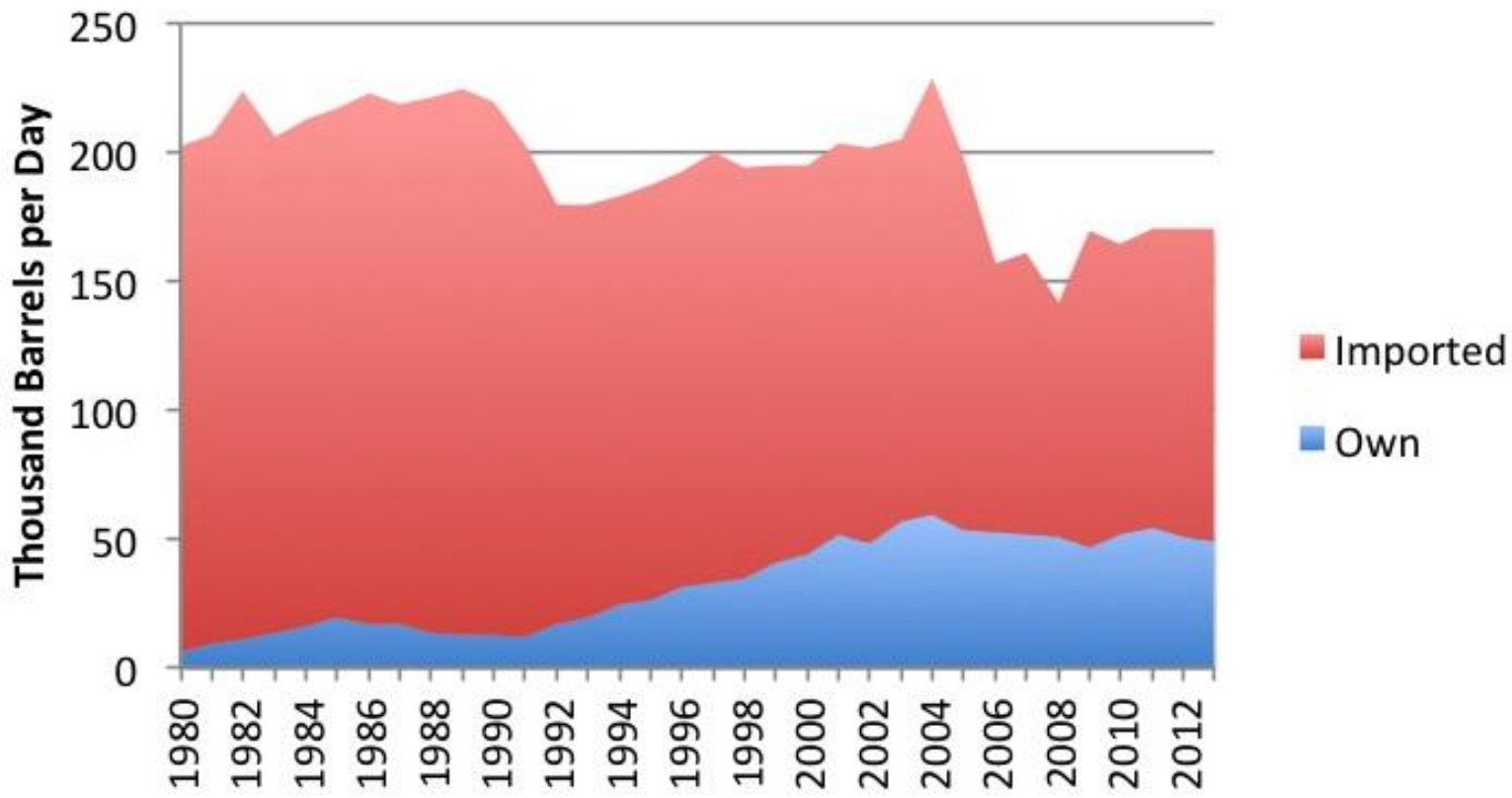


*What is the difference compared to the Brazilian case?*

# Cuba Energy Crisis



## Cuba: Petroleum Consumption by Source



# California Electricity Crisis (Western U.S. Energy Crisis)

- 2000-2001 - California had a shortage of electricity
- California's population increased by 13% during the 1990s. The state did not build any new major power plants during that time, only some expansion of production capacity took place.
- By keeping the consumer (retail) price of electricity artificially very low, the local government discouraged citizens from practicing conservation
- 1996 - California began to lose controls on its energy market and took measures to increase competition
- Government price caps
- 2000 - Significant energy price rises
- 2000-2001 – blackouts affected more than 2 mln customers. A state of emergency was declared.
- September 2001 – energy prices normalized
- Deregulation and decentralization processes in electricity sector were stopped
- One of the lessons learned: both types of electricity prices (retail and wholesale) should be controlled



## Most Common Crises Causes

1. Dependence on one type of fossil fuels for electricity generation
2. Dependence on one supplier
3. Lack of own engineering technological solutions to use renewable sources
4. Regulation failures when investor (or manager of energy assets) doesn't have to maintain them
5. Lack of investments, energy infrastructure needs modernization
6. Expensiveness of technological devices to use energy of solar, wind and biomass

## Most Effective Solutions and Preventions

1. Diversity of energy supply
2. Security of energy supply (multilateral internationally supported agreements)
3. Own investigation and research work needed to be carried on renewable sources of energy
4. Well developed regulation (legislation)
5. Incentives for investors, government should use all instruments to stimulate private investments in this sectors (PPPs, etc.)
6. New electricity use culture, energy saving

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# **Energy Efficiency and Energy Saving**



# Origins of Energy Saving

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1. Do people have to save energy and why?
2. Should energy saving measures be obligatory?
3. What are other ways except obligatory measures to persuade people consume less energy/electric power?
4. Propose when and where energy saving ideas obtained a general recognition?
5. Who should become the leader in introducing energy saving: governments, NGOs, companies, population?

# Measures to Achieve Energy Efficiency

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- Such measures as
  - *Energy efficient consumer electronics*
  - *Change of lighting-switch incandescent lamps to energy efficient lamps*
  - *Energy efficient appliances*
  - *Energy efficient buildings (heat and temperature saving technologies)*
- ... usually are the most popular ones used in different governmental programs. Why?

# Energy Revolution in Cuba

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# Energy Revolution in Cuba

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*Energy revolution means ...?*

1. A conflict between the national government and foreign energy companies
2. Significant changes in the structure of energy production
3. An energy conflict between the population and the government
4. Significant changes in energy consumption

***“A Revolution with Energy:  
saving more we’ll have more”***



# Gross Electricity Output in Cuba per type of generation plants

## Gross electricity output per each generation plant

Gigawatt hora

AÑOS	Total	Generación térmica			Grupos Electrógenos		Renovables	
		Termo-eléctricas	Auto productores <sup>(a)</sup>	Turbinas de gas <sup>(b)</sup>	Interconectados al sistema <sup>(c)</sup>	Aislados	Hidro-eléctricas	Otras <sup>(d)</sup>
2000	15 032,2	12 185,3	1 301,2	1 307,4	-	149,3	89,0	-
2001	15 299,8	12 520,8	1 287,3	1 257,5	-	159,2	75,0	-
2002	15 698,8	12 877,5	1 335,2	1 222,9	-	156,5	106,4	0,3
2003	15 810,5	12 806,2	1 096,5	1 611,0	-	168,7	127,7	0,4
2004	15 633,7	12 335,6	1 160,3	1 871,2	-	178,6	87,6	0,4
2005	15 341,1	12 325,9	802,2	1 937,2	20,1	187,9	67,7	0,1
2006	16 468,4	11 672,3	775,8	2 233,2	1 500,6	192,7	93,5	0,3
2007	17 622,5	11 099,4	779,2	2 493,3	2 917,4	211,6	121,4	0,2
2008	17 681,3	9 828,6	900,9	2 537,9	4 113,5	153,9	138,3	8,2
2009	17 727,1	9 922,3	867,8	2 380,8	4 252,1	149,7	150,8	3,6
2010	17 386,8	10 237,9	802,9	2 269,1	3 892,5	76,1	96,6	11,7
2011	17 759,4	11 112,7	814,9	2 053,7	3 594,8	64,3	99,2	19,8
2012	18 427,9	11 399,9	832,0	2 092,3	3 971,1	-	110,9	21,7
2013	19 156,4	11 883,7	893,7	1 986,6	4 239,5	-	127,3	25,6
2014	19 366,1	11 738,3	837,5	2 794,0	3 855,0	-	104,1	37,2

# Gross Electricity Output in Cuba per type of generation plants

AÑOS	Estructura del total				Tasas (%)			
	Generación térmica	Turbinas de gas	Grupos Electrógenos	Renovables	Generación térmica	Turbinas de gas	Grupos Electrógenos	Renovables
2000	89,7	8,7	1,0	0,6	1,1	40,1	8,2	-13,8
2001	90,3	8,2	1,0	0,5	2,8	-3,8	6,6	-15,7
2002	90,5	7,8	1,0	0,7	2,8	-2,8	-1,7	42,3
2003	87,9	10,2	1,1	0,8	-0,6	31,7	7,8	20,1
2004	86,3	12,0	1,1	0,6	-3,7	16,2	5,9	-31,3
2005	85,6	12,6	1,4	0,4	-0,1	3,5	16,5	-23,0
2006	75,6	13,6	10,3	0,6	-5,3	15,3	714,1	38,3
2007	67,4	14,1	17,8	0,7	-4,9	11,6	84,8	29,7
2008	60,6	14,4	24,2	0,8	-11,4	1,8	36,4	20,5
2009	60,9	13,4	24,9	0,9	1,0	-6,2	3,2	5,4
2010	63,5	13,1	22,8	0,6	3,2	-4,7	-9,8	-29,9
2011	67,2	11,6	20,6	0,7	8,5	-9,5	-7,8	9,9
2012	66,4	11,4	21,5	0,7	2,6	1,9	8,5	11,4
2013	66,7	10,4	22,1	0,8	4,2	-5,1	6,8	15,3
2014	64,9	14,4	19,9	0,7	-1,2	40,6	-9,1	-7,6

...

# Energy Revolution in Cuba

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- Before 1990: Soviet Period in Cuba History
  - *Strong dependence on oil import (60% of primary energy consumption)*
  - *“Oil triangular scheme” of oil import (USSR-Cuba-Venezuela)*
  - *Soviet technical basis of all power generation plants (built mainly in ‘70-80-s)*
- 1990-2004: Cuba Adapting to New Market Conditions
  - *Oil shortage (lost sources of import oil, no financial possibilities to buy it by market prices)*
  - *Local high-sulfur oil was not appropriate for existing plants*
  - *Blackouts and failures in electricity generation became a norm of life (224 days in 1 year)*
  - *Attracting foreign investors*
- Since 2005: New Governmental Policy “Energy Revolution”

# Energy Revolution in Cuba: Goals

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- To reduce dependence on import energy sources
  - *In 1989 more than 90% of energy sources were imported, in 2007 - only 50%*
- To activate national oil exploration and production decreasing oil consumption
  - *In 2009 contracts on oil exploration signed with Spain, Norway, India, Venezuela, Vietnam, Malaysia, Brazil, Canada, China; also with Russia and Angola*
  - *Half of 59 exploration blocks were contracted*
  - *New data on potential oil reserves: from 9 to 20 bln barrels*



To attract foreign investments and new technologies to electricity and oil / gas sector

- Electricity generation:
  - *Gradual shift from traditional oil based thermoelectric plants to modern generation combined cycle plants and autonomous generation groups (electric generators based on fuel oil and diesel engines)*



# Energy Revolution in Cuba: Measures

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- Special measures on energy saving and rational energy consumption
  1. Diesel engines and autonomous electricity generators (based on fuel oil) began to replace traditional thermoelectric stations



# Energy Revolution in Cuba: Measures

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- Special measures on energy saving and rational energy consumption
2. Reconstruction and modernization of thermoelectric plants and of transmission facilities



# Energy Revolution in Cuba: Measures

- Special measures on energy saving and rational energy consumption
  3. Replacement of all old electrical equipment (households, industries)
    - 10 mln energy efficient electric bulbs distributed among population by 2009 (60-80% less electricity consumed)
    - The first country in the world to prohibit the import of incandescent electric bulbs (in 2005)
    - “1 day repair” service centers
    - Differentiated tariffs on electricity consumption
    - Information campaign on culture of energy saving



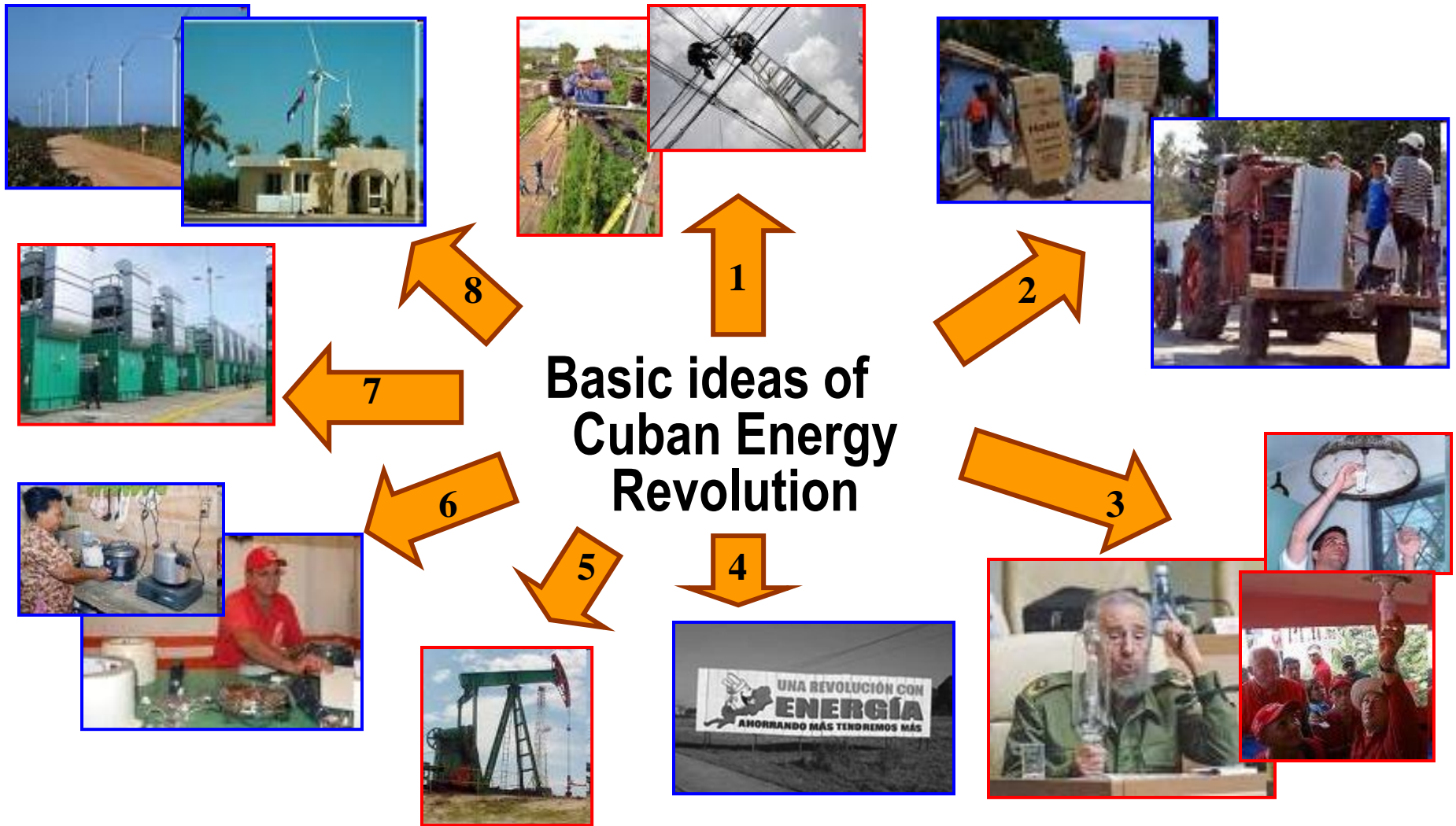
# Energy Revolution in Cuba: Measures

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- Special measures on energy saving and rational energy consumption
4. Replacement of kerosene by electricity in households
  5. Alternative energy: wind, biomass, solar, hydro



# Energy Revolution in Cuba



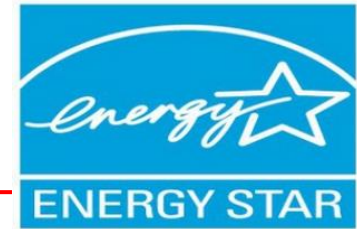
# US ENERGY STAR Program

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# US ENERGY STAR

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- ENERGY STAR is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy aimed at save money and protect the environment through energy efficient products and practices.
- Elaboration of **energy efficient standards** for equipment and technologies that use 20-30% less energy than their analogues

# US ENERGY STAR

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- ENERGY STAR
  - became a symbol of energy quality
  - Is a part of competitiveness of products
  - Is a stimulus for energy equipment producers to cooperate with it



# US ENERGY STAR Strategies

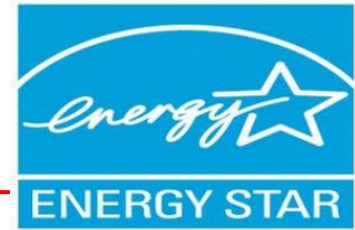
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- ENERGY STAR strategies to stimulate the production of energy saving products:
  1. Elaboration of a clear and comprehensive procedure of products evaluation approved by industrial representatives
  2. The same for building construction industry
    - note: Energy Star voluntary norms are stricter than existing obligatory ones
  3. Elaboration and implementation of indicators system for building construction (35-40% energy less consumed in such buildings)

# US ENERGY STAR: Effect

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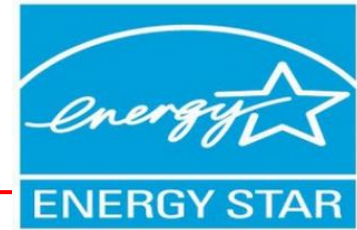
- Savings
  - \$19 bln economized by consumers only in 2008
- Practice Replication
  - Gained a worldwide reputation and was “exported” to such countries and regions as EU, Canada, Japan, Switzerland, Taiwan, Australia, New Zealand, Norway, Iceland and others



- What is the secret of ENERGY STAR success?
  - Energy Star helps **to overcome market barriers** that complicate the expansion of energy saving technologies **by giving full and clear information on them**
  - A real symbol of energy quality
    - All products with the logotype ENERGY STAR are tested and certified by this program

# US ENERGY STAR

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**ENERGY STAR** saves you money and protects the environment.

Use of qualified products in your home can mean up to 30% savings.

**The 2nd price tag:** Products have two price tags: the buying price and the cost of electricity to use the product over its lifetime.

**An easy choice:** Either the product is energy efficient because it displays the ENERGY STAR mark or it isn't (has no mark).

# EU Ecolable

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# EU Ecolabel

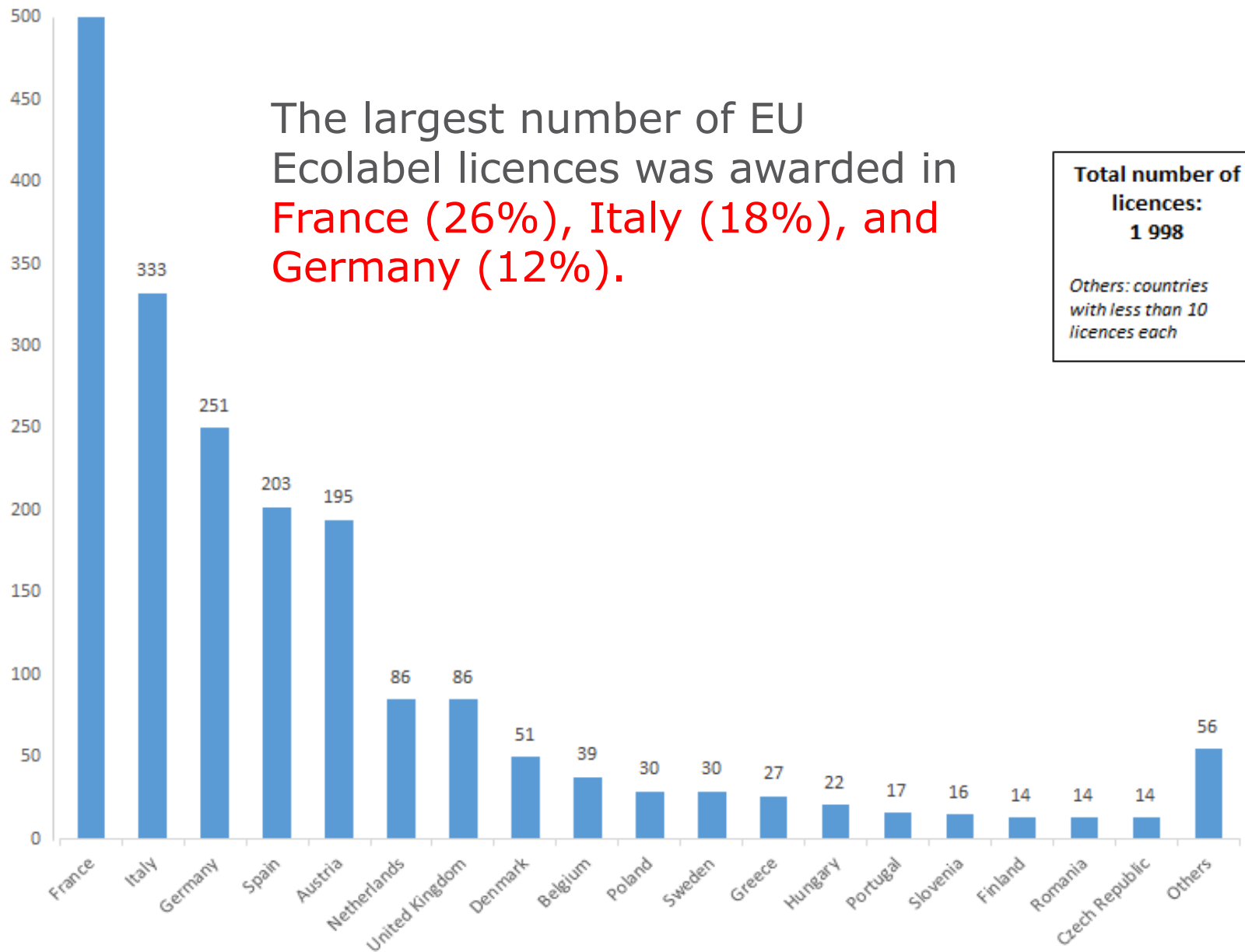
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- The European Ecolabel is a voluntary scheme
  - *established in 1992 to encourage businesses to market products and services that are kinder to the environment*
- The flower logo to identify marked products easily
- Product groups include
  - *cleaning products, appliances, paper products, textile and home and garden products, lubricants and services such as tourist accommodation*
- The label itself is only awarded after verification that the product meets high environmental and performance standards

# TOTAL EU ECOLABEL LICENCES PER COUNTRY

-September 2016



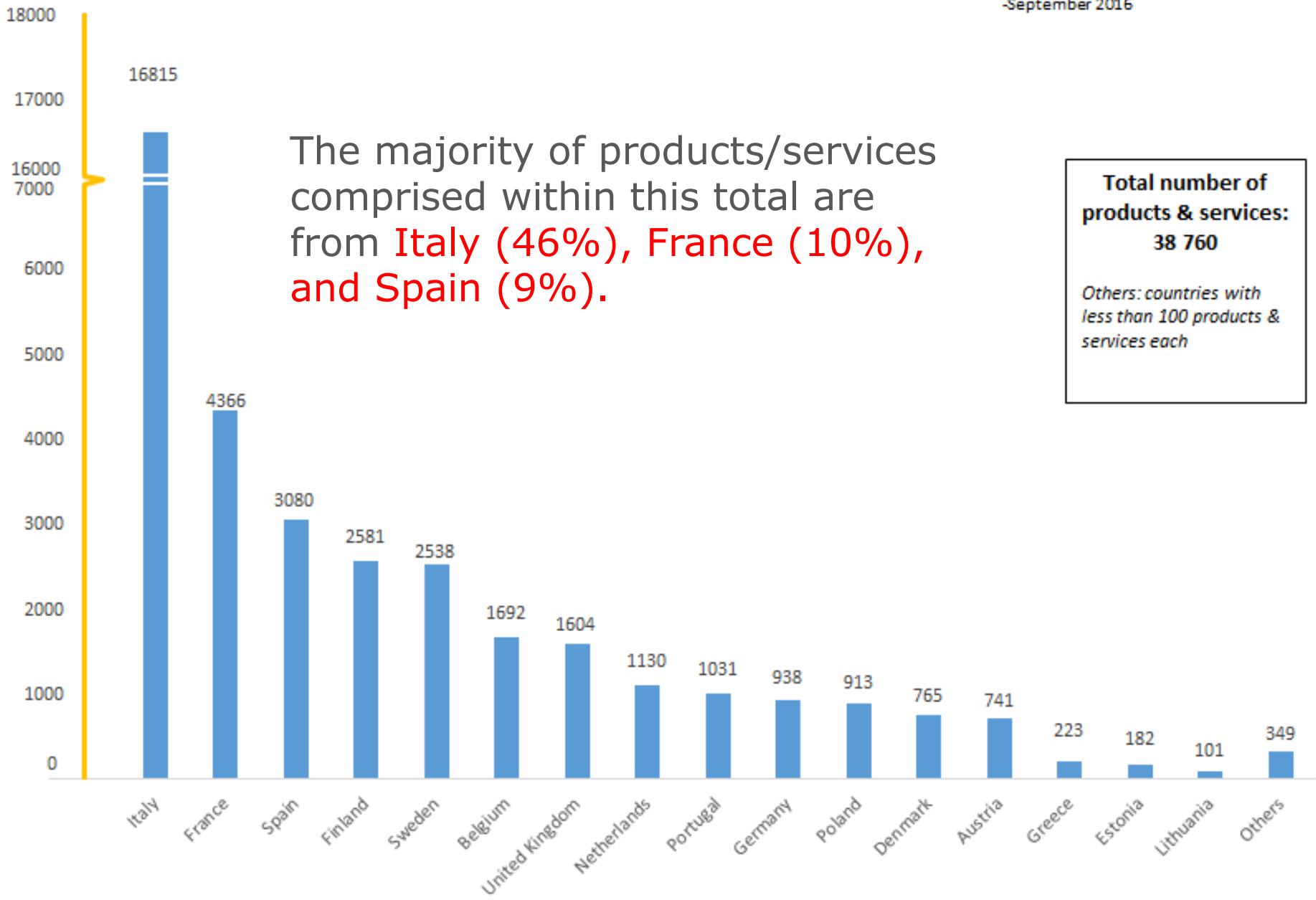
# TOTAL EU ECOLABEL PRODUCTS & SERVICES PER COUNTRY

-September 2016

The majority of products/services comprised within this total are from **Italy (46%)**, **France (10%)**, and **Spain (9%)**.

**Total number of products & services: 38 760**

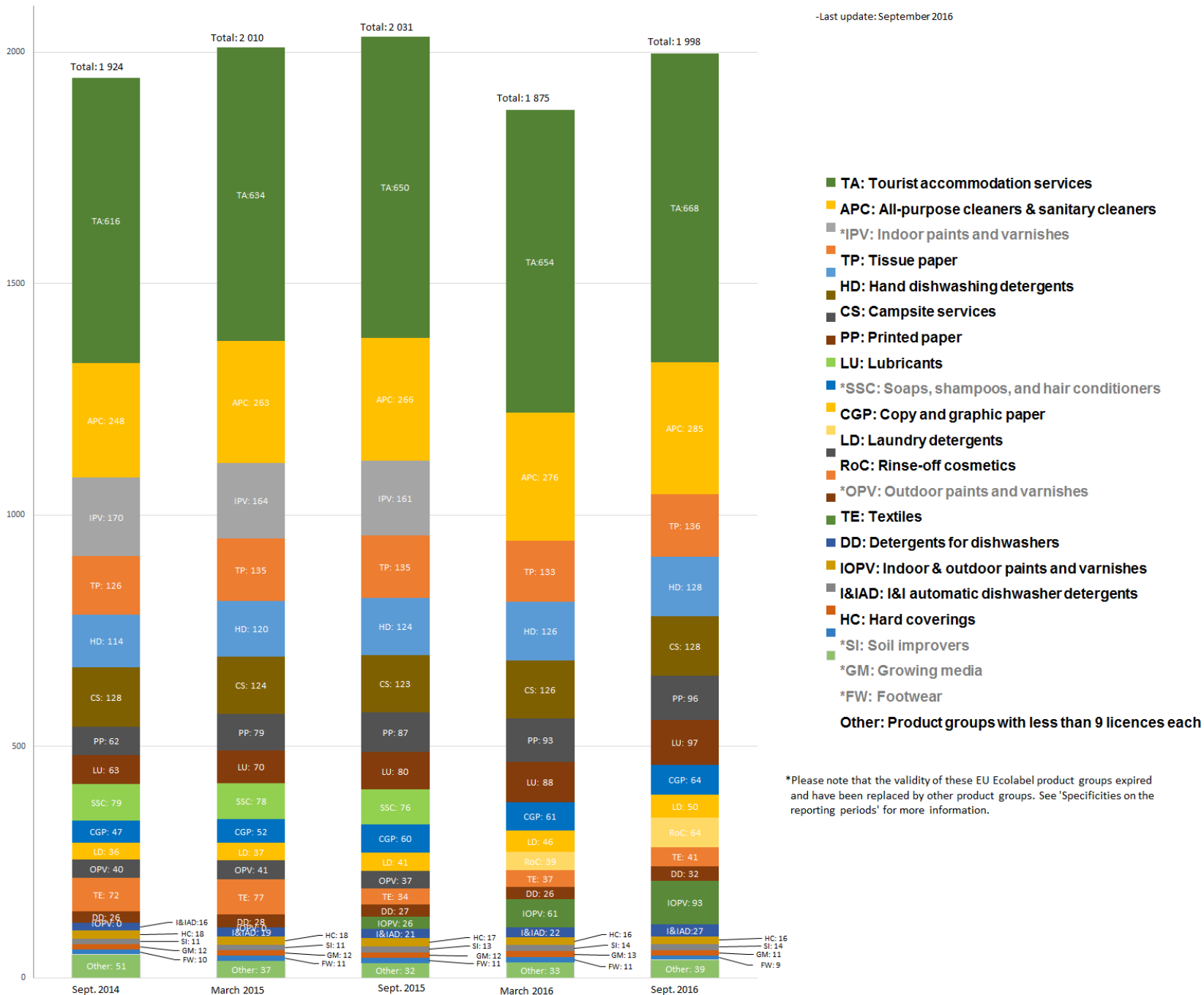
*Others: countries with less than 100 products & services each*





# TOTAL EU ECOLABEL LICENCES PER PRODUCT/SERVICE GROUP

-Last update: September 2016



\*Please note that the validity of these EU Ecolabel product groups expired and have been replaced by other product groups. See 'Specificities on the reporting periods' for more information.

# EU Ecolabel

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## Targets:

- Many more EU Ecolabel products on the shelves
- Criteria documents which can easily be used by public purchasers
- An Ecolabel that is very well harmonised with other labels, nationally and globally
- An Ecolabel that can be attained by companies with limited costs and efforts for them while still maintaining a high ambition

# SUCCESS STORY

## Boutiquehotel Stadthalle

Awarded the EU Ecolabel for tourist accommodations in 2007

Location: HQ – Vienna, Austria  
Service advertised: throughout Europe  
Competent Body with which application was made: Austrian CB  
Interviewee: Claudia Plot – Director

### ABOUT



In 2002, Michaela Reitterer renovated the building that would become the world's first city hotel with a zero energy balance in 2009. Depending on the weather, the 130 m<sup>2</sup> solar installation supplies enough electricity and energy to power the hotel and heat the facility's water. The green vines and lavender garden intertwined on the building's walls and roof insulate the hotel while creating an aesthetically pleasing view. During the harvest season, lavender is collected to create sachets, and homemade apricot jam from the region of Wachau is distributed to guests. Additionally, the water well in the garden assists in powering the hotel's flushing toilets and irrigates the hotel's garden. This haven for eco-tourists has won numerous sustainability awards and was recently crowned 2013's "Most Popular Hotel in Austria" by HolidayCheck.

### WHY EU ECOLABEL?



"After obtaining the Austrian Ecolabel, our Competent Body suggested that we apply for the EU Ecolabel to reap the advantages of both labels. We thought it was an excellent idea to spread our sustainability message throughout the entire European continent via this certification".

### BENEFITS



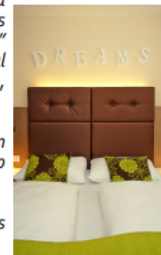
"With the adoption of the EU Ecolabel, we began to build reputation as a sustainable and trusted hotel. This re solidified as an increasing number of suppliers approach eco-friendly products, ready to become partners. The market expanded to the point where we now welcome eco-friendly travellers on a regular basis".

### CHALLENGES

- ★ During the application process:
  - ★ "The information available on the EU Ecolabel website was rather basic in 2007, therefore it was difficult to obtain quick information at first".
- ★ After being awarded the EU Ecolabel:
  - ★ "Some guests are not always aware about the difference between ecolabels and organic certifications, which has sometimes led to confusion. We have had to make sure that these types of misconceptions do not lead to wrong expectations among guests. Nevertheless, we actually have experienced more advantages than challenges".
- ★ How these challenges were overcome:
  - ★ "We appreciated receiving the great deal of indirect support once we were awarded the EU Ecolabel, especially from (climate-related) authorities. We eventually were treated and regarded as role models, which meant a lot of press coverage; the level of publicity that we obtained justified our efforts in obtaining the EU Ecolabel".

### MARKETING

- ★ "Our marketing efforts stem from our website ([www.hotelstadthalle.at/en](http://www.hotelstadthalle.at/en)) and extend through our social media platforms and our Green Guest Club. This club is a loyalty programme which allows our regular guests to collect "Green Points" and pay a range of hotel services with them. To appeal to the international eco-tourist, we translated our website into seven different languages (German, English, French, Italian, Spanish, Hungarian and Czech).
- ★ Additionally, since our hotel has won various sustainability and eco-tourism awards, past and potential guests can rest assured that we always strive to live up to our hotel's environmental mission and positive customer satisfaction reviews.
- ★ Satisfied guests have also greatly facilitated our outreach, as word of mouth has spread positive news about our hotel".



# FACTS ABOUT EU ECOLABEL: what are environmental positive results?

## TOWARDS A CIRCULAR ECONOMY

The EU Ecolabel promotes Europe's transition to a circular economy, where materials stay in a loop, so new products begin when old ones end. This drives manufacturers to produce goods that:

- ★ Promote green innovation and sustainable industries
- ★ Generate less waste and CO<sub>2</sub> when they are made and used
- ★ Use energy, water and raw materials more wisely
- ★ Last longer and are easier to repair
- ★ Are easier to recycle

For example, some paints now use oil from algae as a low-carbon alternative to traditional petrol-based oil.

Thanks to the label's transparent criteria, consumers can make responsible choices while supporting green innovation and jobs

## ECO-VALUES IN ACTION

*Find out more about the European Commission's Circular Economy Package, a detailed plan to move to a more competitive, sustainable economy.*  
[ec.europa.eu/environment/circular-economy](http://ec.europa.eu/environment/circular-economy)

Look for the **EU Ecolabel** for products and services that are better for the environment and better for you.

**It is the label that makes green choices easy.**

## ADDITIONAL INFORMATION

EU policies support and recognise sustainable production and consumption.



EU Ecolabel:  
[www.ecolabel.eu](http://www.ecolabel.eu)



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Environment

## A LABEL YOU CAN TRUST

Around 40 000 products and services hold the EU Ecolabel, from baby clothes to electronic equipment. It is a reliable label that identifies products and services with a reduced environmental impact:

- ★ Verified by independent experts
- ★ Strict criteria for over 30 different categories of products and services, updated regularly
- ★ The entire product life cycle considered, from production to recycling or disposal
- ★ Consumer health and responsible production guaranteed
- ★ No compromise on performance. It is easy to consume green!

65 % of consumers who know the EU Ecolabel already trust it\*.

EU Ecolabel products can come from anywhere in the world, as long as they prove that they fulfil its criteria.

\* Consumer Market Study on Environmental Claims for Non-Food Products, European Commission 2014

# FACTS ABOUT EU ECOLABEL: what are environmental positive results?

## TOWARDS A CIRCULAR ECONOMY

The EU Ecolabel promotes Europe's transition to a circular economy, where materials stay in a loop, so new products begin when old ones end. This drives manufacturers to produce goods that:

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For example, some paints now use oil from algae as a low-carbon alternative to traditional petrol-based oil.

Thanks to the label's transparent criteria, consumers can make responsible choices while supporting green innovation and jobs.

**Better for the environment,  
better for you**

Reduced environmental impact

Cuts waste and harmful substances

As effective as conventional products

Rewards responsible businesses

# FACTS ABOUT EU ECOLABLE: what are environmental positive results?

## HOW GREEN CAN YOU SHOP?

### LOOKING FOR A GREEN HOLIDAY?

Hotels and campsites can display the label, too. They are just as comfortable as traditional accommodation, but **use less energy and water and produce less waste, including food waste.**

[ec.europa.eu/ecat/hotels-campsites](http://ec.europa.eu/ecat/hotels-campsites)

It is easier than you think to make the responsible choice for your home, work or free time. Here are just some of the products with the EU Ecolabel to inspire you to switch to a sustainable lifestyle.

### CLEANING UP

Washing detergent has to work at **30°C**, saving energy and money with each wash.

### PERSONAL CARE PRODUCTS

8 million tonnes of plastic enter oceans each year - criteria **ban microplastics** and **limit packaging waste.**

### ELECTRONIC EQUIPMENT

Products must be **easy to repair and upgrade** so they last longer.

### DO-IT-YOURSELF

Keep your indoor air clean. Paints have **less than half** the solvent emissions of conventional products.

### PAPER PRODUCTS

Almost half of all trees harvested worldwide become paper. Support **recycled** or **sustainable** sources instead.

### FURNITURE

Items must **do their job well** and last. When their useful life ends, **they must be easy to recycle.**

### CLOTHING AND TEXTILES

Shoes must be assembled in **safe and fair conditions** - doing good while looking good!



**READY TO START SHOPPING?**

Access the full catalogue of products here: [ec.europa.eu/ecat](http://ec.europa.eu/ecat)

# FACTS ABOUT EU ECOLABEL: what are environmental positive results?

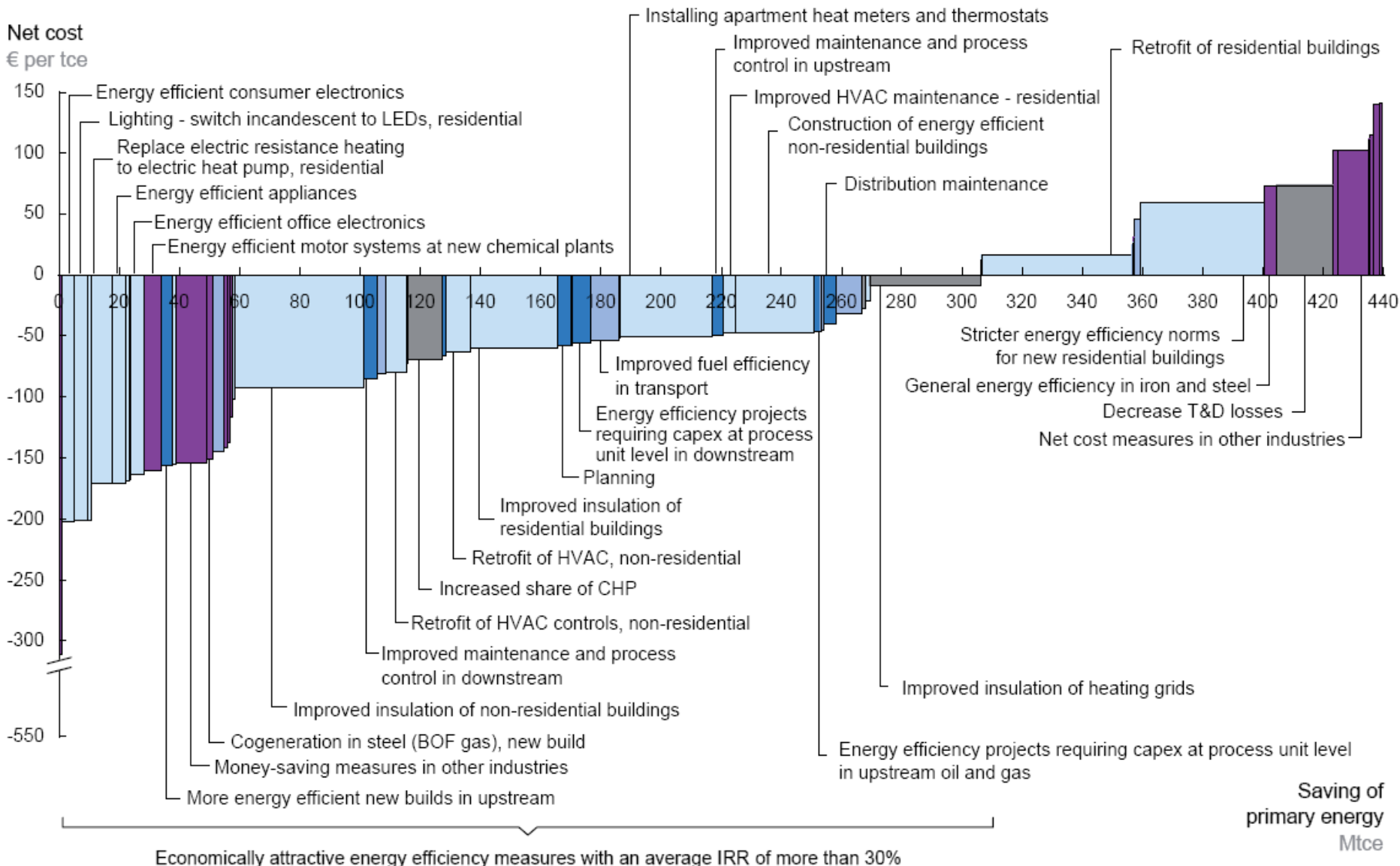
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- To qualify for the EU Ecolabel, products have to comply with a tough set of criteria. These environmental criteria, set by a panel of experts from a number of stakeholders, including consumer organizations and industry, *take the **whole product life cycle** into account - from the extraction of the raw materials, to production, packaging and transport, right through to your use and then your recycling bin.*
- This **life cycle approach** guarantees that the products' main environmental impacts are reduced in comparison to similar products on the market.



# Energy Efficiency Curve 2030 for Russia

- Power and Heat
- Buildings
- Petroleum and Gas
- Road Transport
- Other Industries

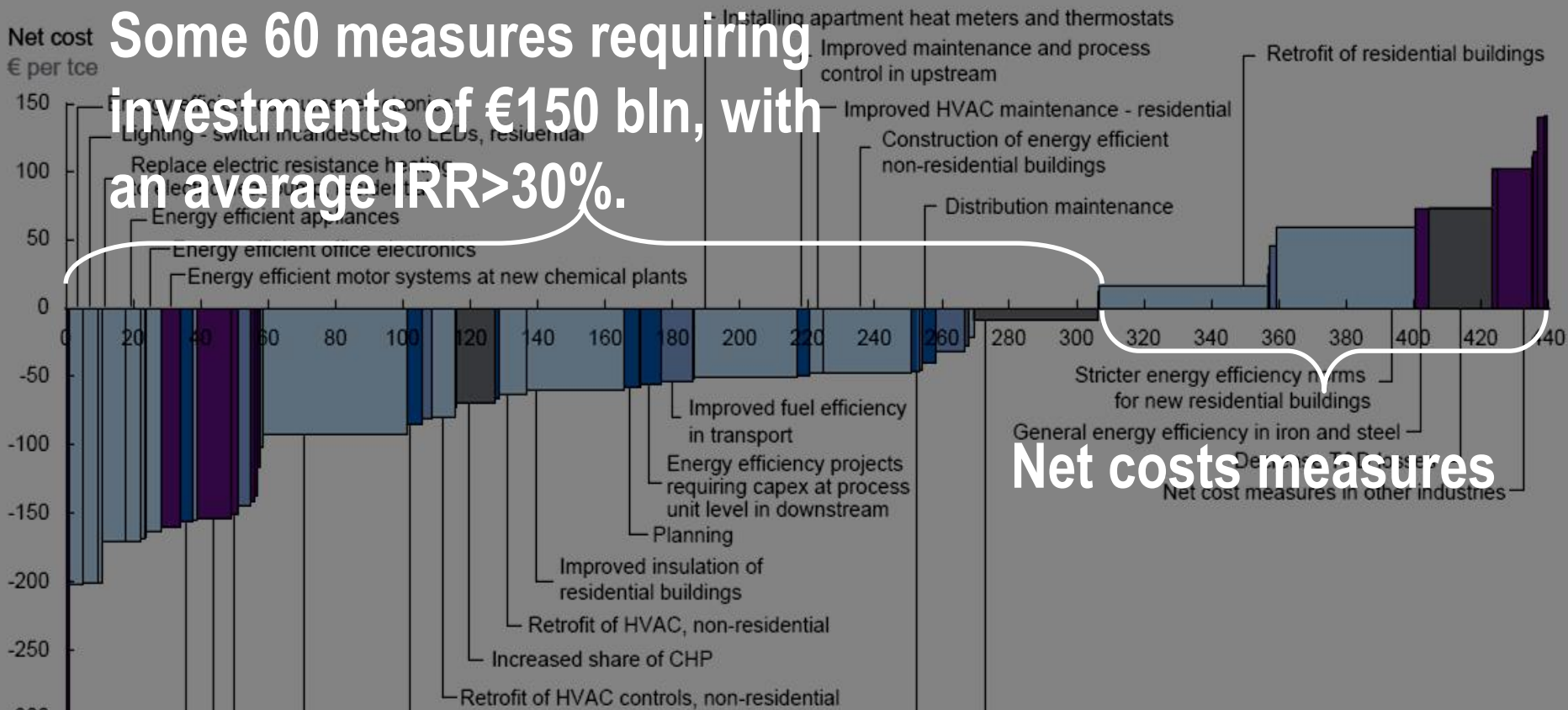


SOURCE: McKinsey



# Energy Efficiency Curve 2030 for Russia

- Power and Heat
- Petroleum and Gas
- Buildings
- Road Transport
- Other Industries



The graphic shows the energy efficiency measures, with the volume of energy (in tce) that could be saved for 2030 on the X axis, set against the costs of these measures for 2030 on the Y axis (in € per tce). Since most measures save money they are portrayed on the Y axis as “negative costs”.

# Energy reduction potential by implementing energy efficient measures in 2030 by sector

Mtce

