

Location Presentation

Sustainability and Green Technologies in Austria

Austrian Federal Ministry of Sustainability and
Tourism
Directorate V/7 – Environmental Protection at
Company Level and Technology

Austria: Location and Key Figures

- 8.8 m inhabitants
- Surface area 84,000 km²
- Republic with nine Federal States



Austria: The land of majestic mountains, clean air, clear water, music and environmental technology



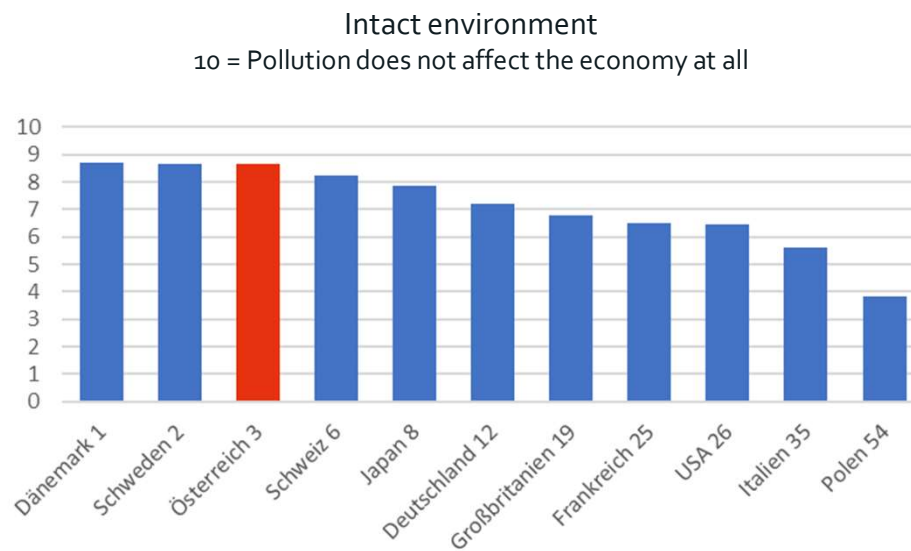
BMNT/Andreas Hollinger



BMNT/Alexander Haiden

Location presentation Austria

Magnificent countryside protected by strict environmental legislation and an affinity with the environment

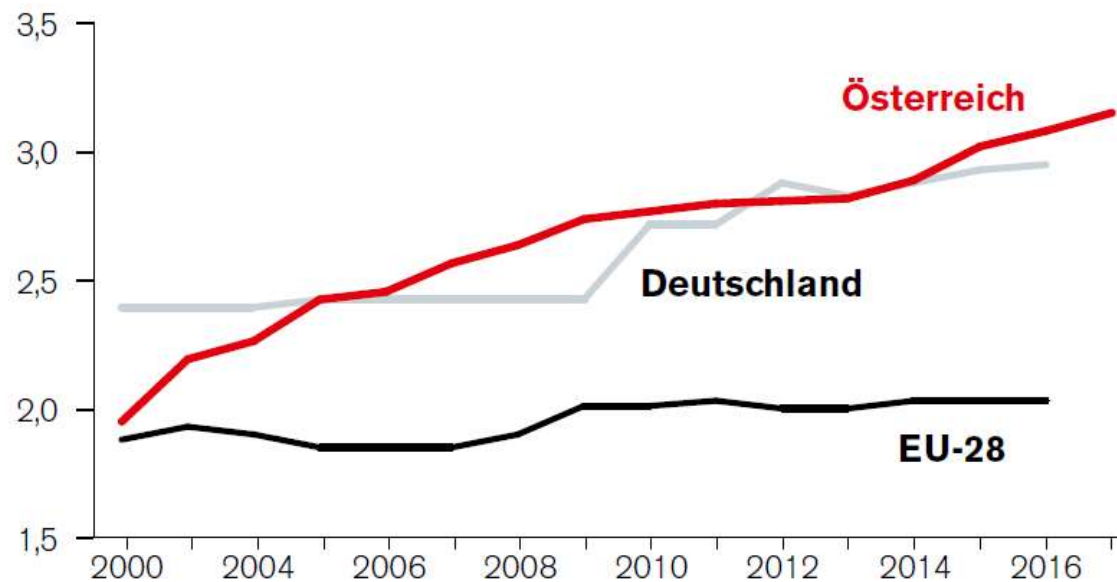


IMD World Competitiveness Yearbook, 2018 modified



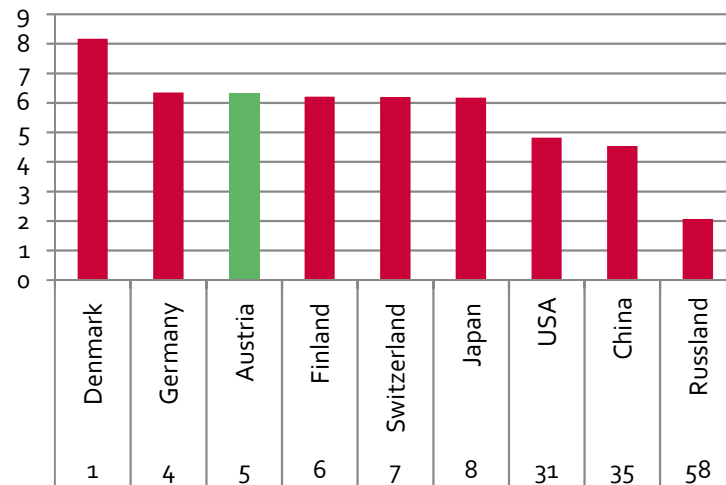
BMNT/Bernhard Kern

Research creates excellence in environmental technology and renewable energy



Comparison of R&D spending
development (% GDP)

New technologies quickly lead to competitive advantage



IMD WCY Executive Opinion Survey, Data from IMD World Competitiveness online

Green Technologies - Index: Competitiveness of various countries in Green Tech



dieindustrie.at/Mathias Kniepeiss



BMNT/Alexander Haiden

Environmental legislation and targeted promotion of Innovative environmental technologies

Leading position in the development, deployment and export of innovative environmental technologies



Further secure and strengthen this position by :

- Targeted export promotion
- Research and training programs
- Grants and funding
- Strengthening of the domestic market

Strong initiatives for economy and environment



BMNT/Alexander Haiden

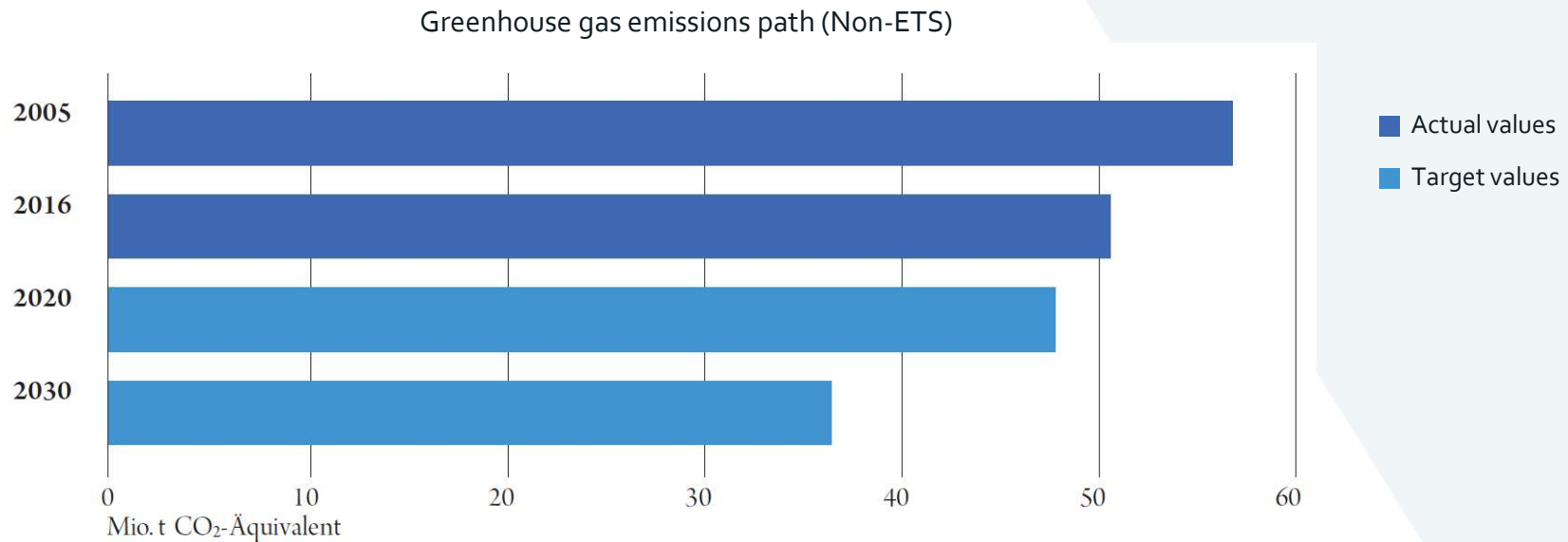
- Strategic initiatives
 - Environmental Technologies Master Plan
 - #Mission 2030 – The Austrian Government’s Climate Change and Energy Strategy
- Awareness raising initiatives
 - klima:aktiv climate protection campaign
 - Austrian Ecolabel
 - State Prize for Environment and Energy Technology
 - EMAS
- Investment Initiatives
 - Sustainable public sector procurement
 - Environmental support

#Mission 2030 – The Austrian Government's Climate Change and Energy Strategy



- Austria is committed to international climate targets and an active climate and energy policy.
 - Austria will reduce its greenhouse gas emissions by 36 % compared to 2005 by 2030
 - Balance between ecological sustainability, competitiveness and supply security
- Orientation for all areas of activity by 2050 (particularly by 2030)
 - Consequent decarbonisation path reaching to 2050

Climate Protection in Austria- Greenhouse Gas Targets



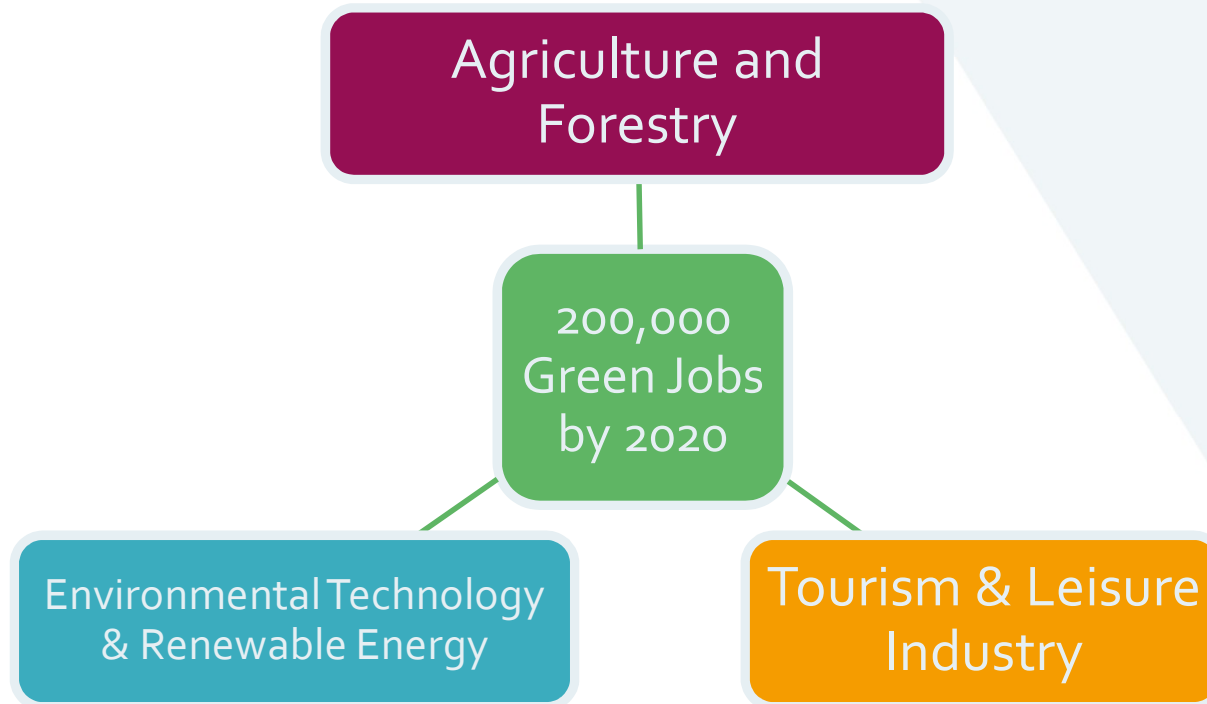
Source: Federal Environment Agency

Decarbonisation by 2050 – Abandoning fossil energy

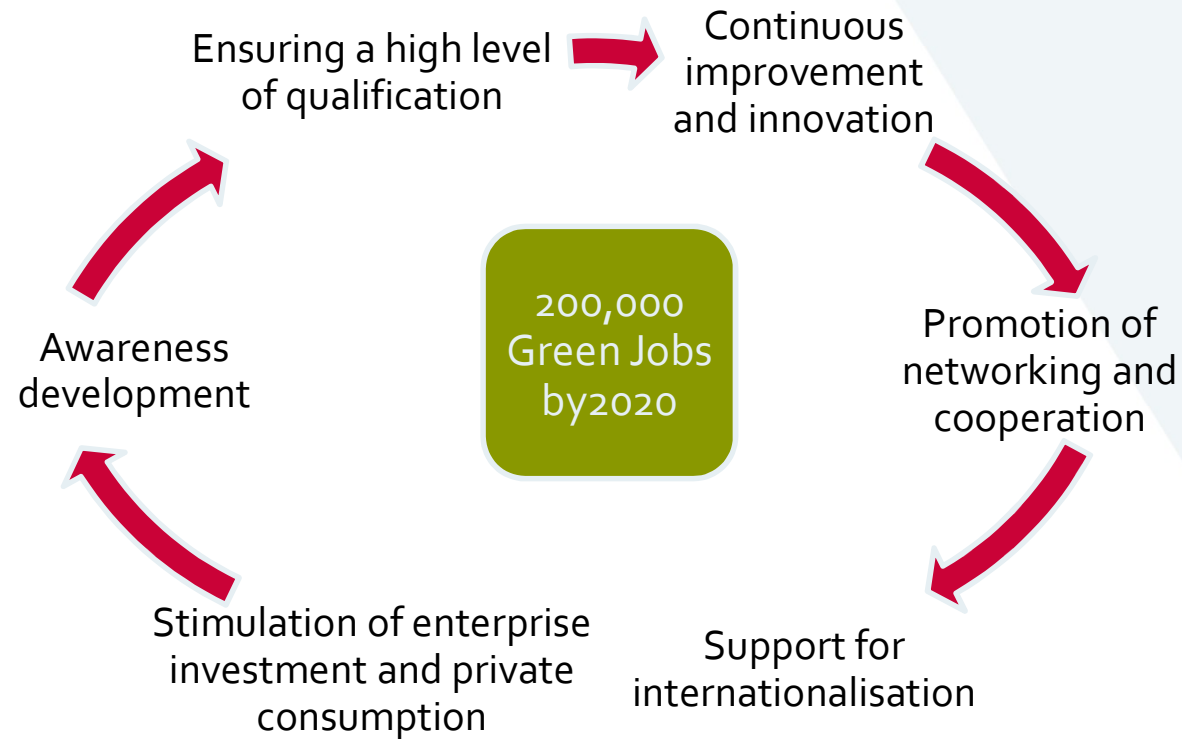
Implementation of the Paris Agreement in Austria

- Austria is leading the ratification of the Paris Agreement
 - Austria is one of the first countries to deposit ratification with the UN
- In Katowice, 196 countries agreed on a common rulebook for implementation
 - Austria joined the „High Ambition Coalition“ during the negotiations
 - This group helped push the negotiations forward
- Austrian climate and energy strategy as a framework for implementation of the Paris climate targets

GREEN JOBS SECURE EMPLOYMENT



GREEN JOBS WIN-WIN FOR ENVIRONMENT AND ECONOMY



STATE PRIZE²⁰¹⁸ ENVIRONMENT AND ENERGY TECHNOLOGY



Jack Coleman/Sontacci



- Category Environment, Climate and Energy
 - ecop technologies for the project „Rotation Heat Pump“
- Category Research and Innovation
 - Fronius International for the project „SOLH₂UB“
- Special Price Resource Efficiency
 - Compuritas for the project „Hardware as a Service“

ENVIETECH – ENERGY AND ENVIRONMENTAL TECHNOLOGY CONFERENCE

- International congress for environmental technology since 2008
- An industry event to showcase Austrian solutions



Jack Coleman/Sontacci



Jack Coleman/Sontacci

2018 topic: Lateral thinking for the future

CORPORATE ENVIRONMENTAL PROTECTION– A HIGH-RETURN ENVIRONMENTAL INVESTMENT

Case study Grossfurtner butchers

- Biogas plant turns slaughterhouse waste into energy
 - 1/3 of the energy demand, 3/4 of the heat demand
 - Awarded the Energy Globe Award as early as 2010
- Cascading heat usage at the Utzenaich site
 - State Prize²⁰¹⁵ Environment and Energy Technology
- Waste prevention and sustainable resource management
 - Waste management award „Phönix“



Grossfurtner

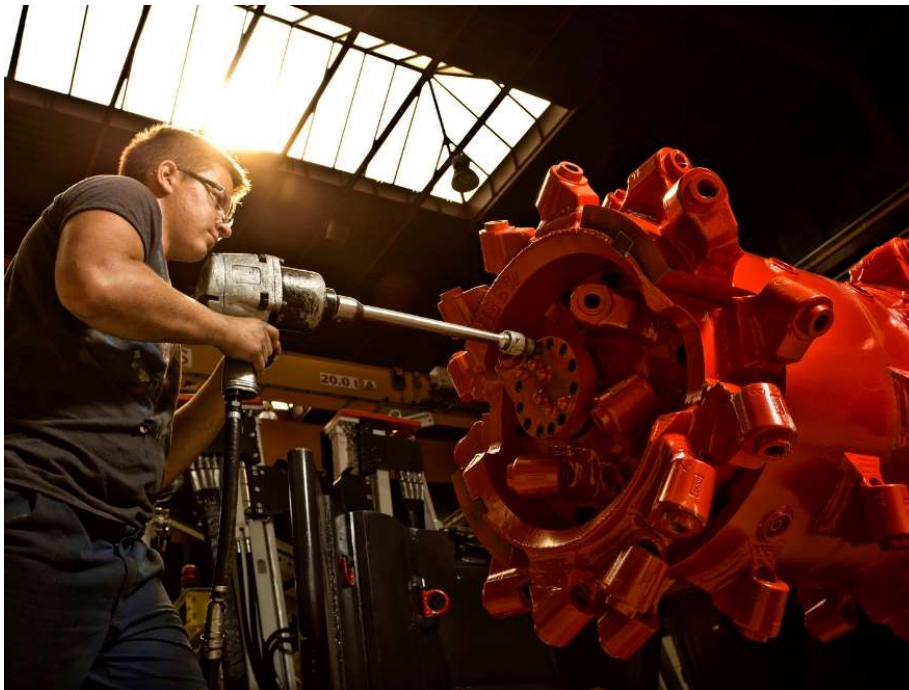
EMAS – SUSTAINABLE DEVELOPMENT IN BUSINESS AND ADMINISTRATION

- A voluntary assisting instrument to continually improve environmental performance



- Ecological and economic deficiencies within an organisation are eliminated
- Energy and cost savings
- Private companies and the public administration participate in the program

Green Economy – High job potential



Die Industrie.at, Mathias Kniepeiss

Also in the future by promoting

- Energy efficiency
- Energy conservation
- Renewable energy
- Environmental technology
- Resource efficiency

183,378 people in green jobs

€ 33.9 billion turnover

Climate and Energy Fund

The major driver of research with the BMNT ministry



BMNT, Alexander Haiden

- Founded in 2007 on the basis of the Climate and Energy Fund Act
- Aim of restructuring the Austrian energy system
- EUR 1.1 billion for innovative research and demonstration projects
- 124.950 projects have been funded

Environmental Technologies Export Initiative

Presentation of innovative strength of Austria abroad



Thöni Industriebetriebe; Biogas plant UK

- Foundation 2005 to strengthen export orientation, in particular of SMEs
- 16 countries visited so far
- 200 companies have participated
- Aim: Increasing exports from 60% to 80% by 2020

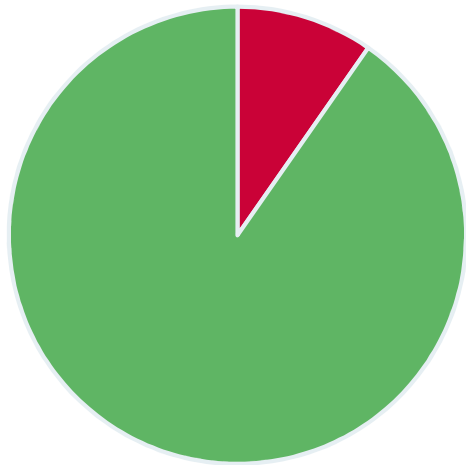
Environmental Funding – A Success Story for 25 Years



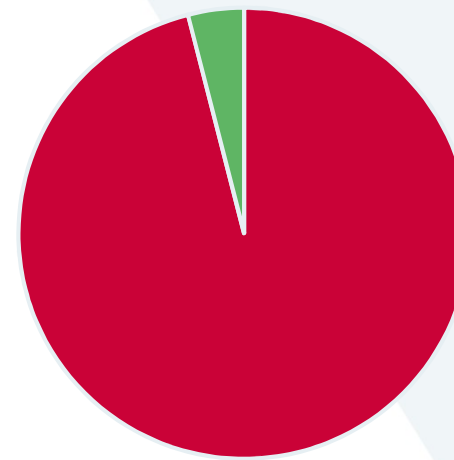
Ringhofer, Klimafonds

- Based on the Environmental Aid Act of 1993
- Implemented so far:
 - 200,908 projects
 - EUR 7.9 billion in subsidies
 - EUR 31.9 billion in environmental investments
- In 2016 alone: 40 projects funded
- 18,000 green jobs secured

Measurable Success shows the Effect of the Austrian Environmental Policy



■ Turnover in environmental sector
■ Total GDP



■ Total workforce
■ People in environmental sector

 Bundesministerium
Nachhaltigkeit und
Tourismus

Renewable Energy Technologies

[bmnt.gv.at](https://www.bmnt.gv.at)



iStock

Renewable Energy: Measurable Results in Terms of Employment and Environmental Protection



iStock

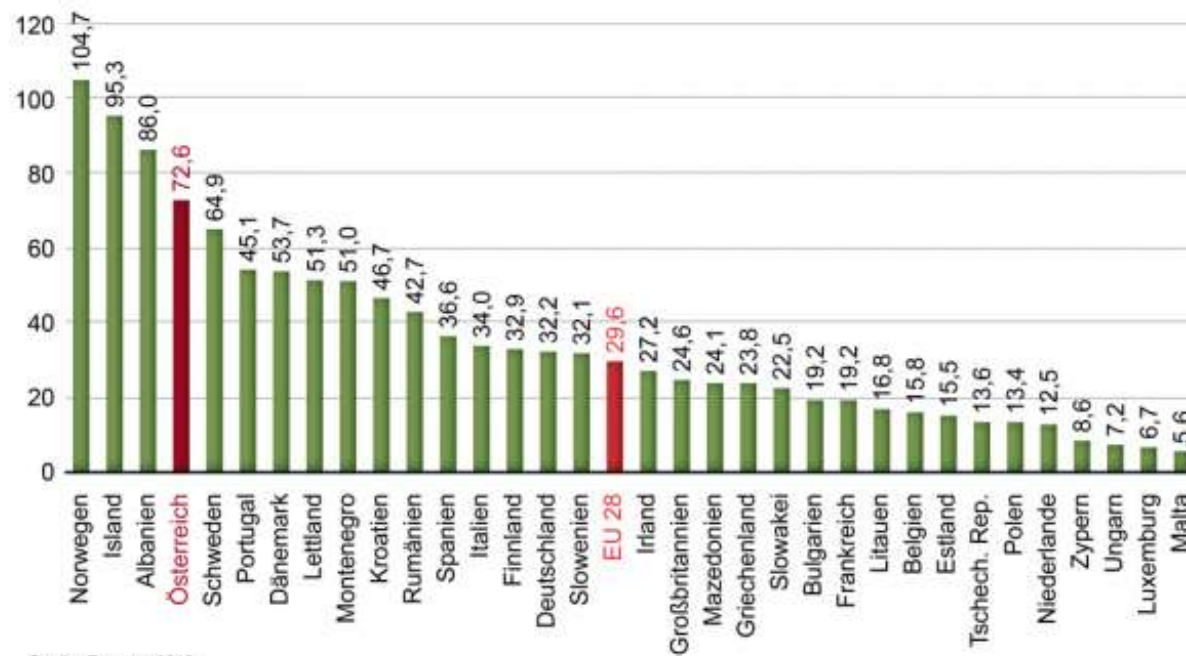
33.5% renewable energy of total consumption
72.6% of electricity consumption in 2016

In 2016 alone:

- Avoidance of the equivalent of 30.2 million t CO₂
- Sales in this area € 7.2 billion
- Around 41,600 jobs

Data from BMNT

Extremely High Share of Renewable Energy

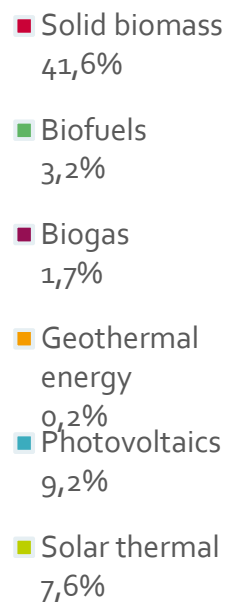
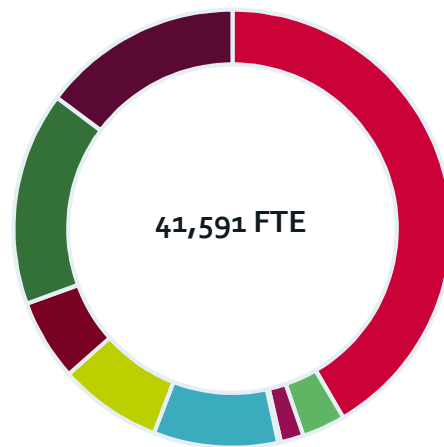


Quelle: Eurostat 2018

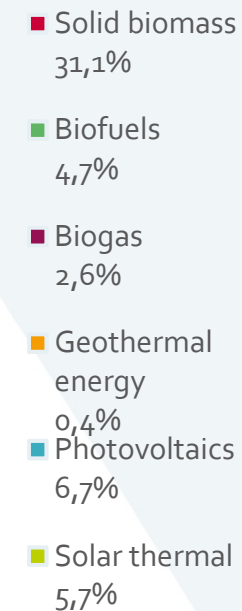
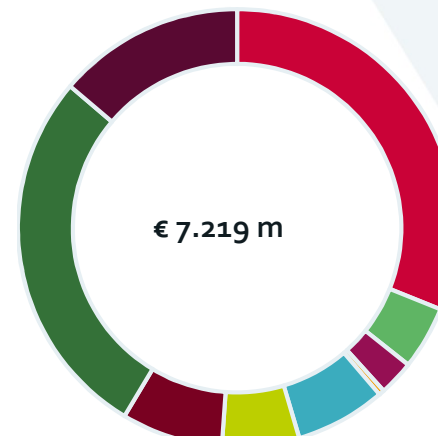
- Austria: 72.6% with high quality
- Europe: 29.6%
- Globally: 23.9%

Employment and Economic Relevance of Individual Technologies

Renewable energy by employees



Renewable energy by sales



STORAGE AS A KEY TECHNOLOGY

**DEVELOPMENT OF RENEWABLE
AND SECURE SUPPLY**



Photo: Wien Energie GmbH, Ian Ehm (from the Storage Initiative Report)

AUSTRIAN STORAGE INITIATIVE

- Storage is key for an entirely renewable energy supply
- Research in Austrian areas of strength in innovative storage technologies
- Development of storage for new areas of application
 - High temperature, seasonal storage, modular pumped-storage, hydrogen/methane etc.
- Austria has leading technology expertise in storage



Lithium-Ion storage in the mobility sector
Photo: Samsung SDI Battery Systems GmbH



Sorption store, AEE INTEC



Hydrogen filling station, OMV

DECARBONISATION WITH HYDROGEN IN THE STEEL INDUSTRY

- Voestalpine is building the largest industrial hydrogen pilot plant worldwide within the EU funded H2FUTURE framework
- An important step towards decarbonisation in the steel industry
- 1200 m³ H₂ per hour will be produced



voestalpine

HYDROGEN AS A LINKING ELEMENT BETWEEN SECTORS

- Photovoltaic electricity is stored as green hydrogen using electrolysis
- Use as fuel for hydrogen cars
- Seasonal storage and transformation into energy and heat using fuel cells
- Awarded the State Prize²⁰¹⁸ for Environment and Energy Technology



Fronius International

SOLAR THERMAL AND SOLAR COOLING

**HEAT FOR AUSTRIA -
COOLING FOR THE HOTTEST
AREAS IN THE WORLD**



A PIONEERING FORCE IN THE FORMATIVE PERIOD OF SOLAR THERMAL ENERGY

- Ambitious research programs lead by ministries from 1977
- Most modern and largest collector production facility in Europe founded in 1978
- Funding support from 1992 and a broad solar campaign from 1999
- Austria is a pioneer in funding support- an already developed industry was able to exploit market growth in other countries
- Today it is almost an integral part of new residential buildings in Austria



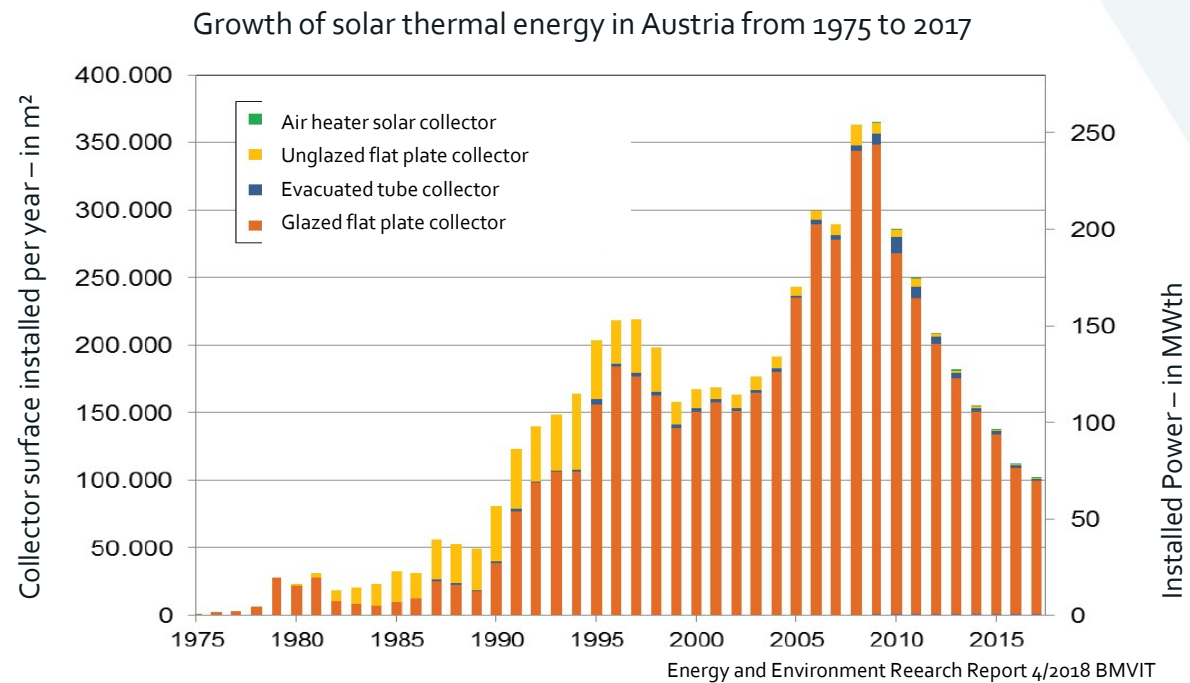
BMNT/AEE Intec



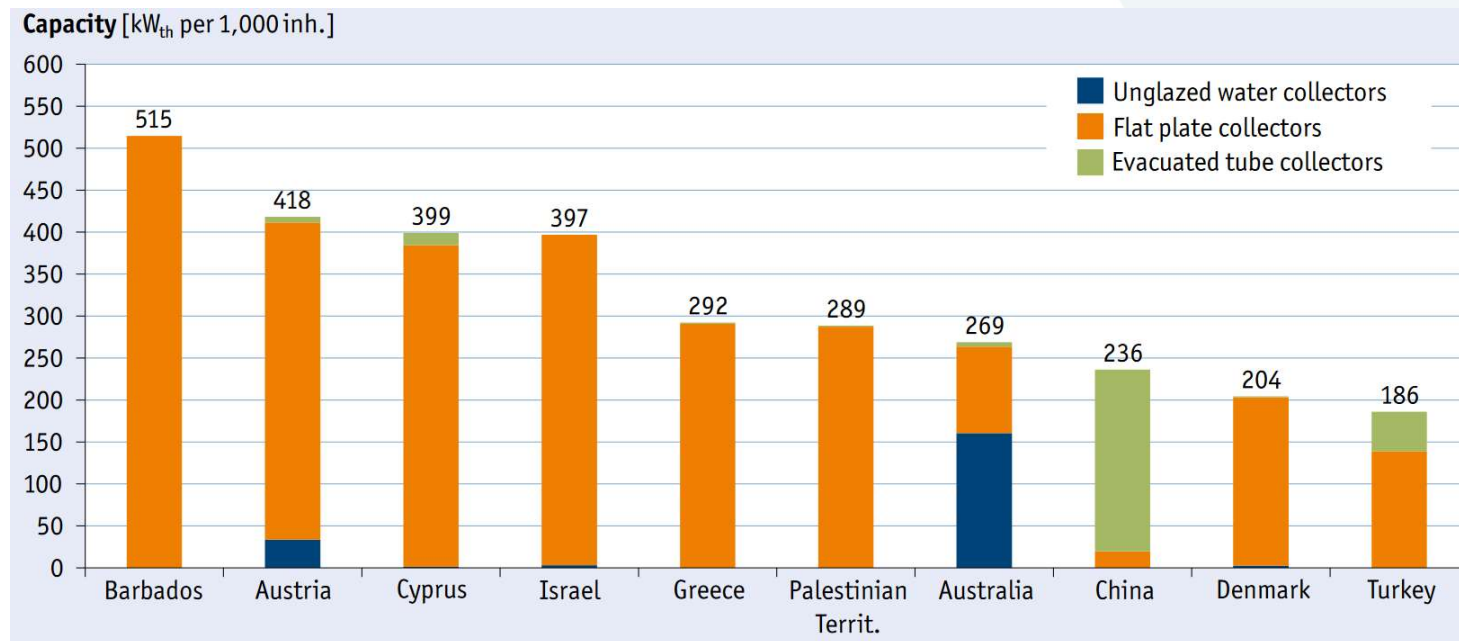
Winkler Solar

DEVELOPMENT OF AUSTRIAN SOLAR THERMAL MARKET TO A WORLD LEADER

- 5.9 million m² of collector surfaces were installed by 2017
- In 2017 alone: 408,704t CO₂ saved / over 2,121 GWh in heat produced



LEADING OUTPUT WORLDWIDE IN INSTALLED COLLECTORS



Solar Heat Worldwide 2018 <http://www.iea-shc.org/solar-heat-worldwide>

- Sales of solar thermal industry in Austria in 2017: € 178 million
- 1,500 jobs solely through the solar thermal industry

SOLAR THERMAL ENERGY FOR TOMORROW'S MUNICIPAL HEAT SUPPLY



PICFLY.at / Thomas Eberhard

SOME OF THE LARGEST PROJECTS IN SOLAR THERMAL ENERGY AND COOLING FROM AUSTRIA



PepsiCo, Phoenix

SOLID



SOLID

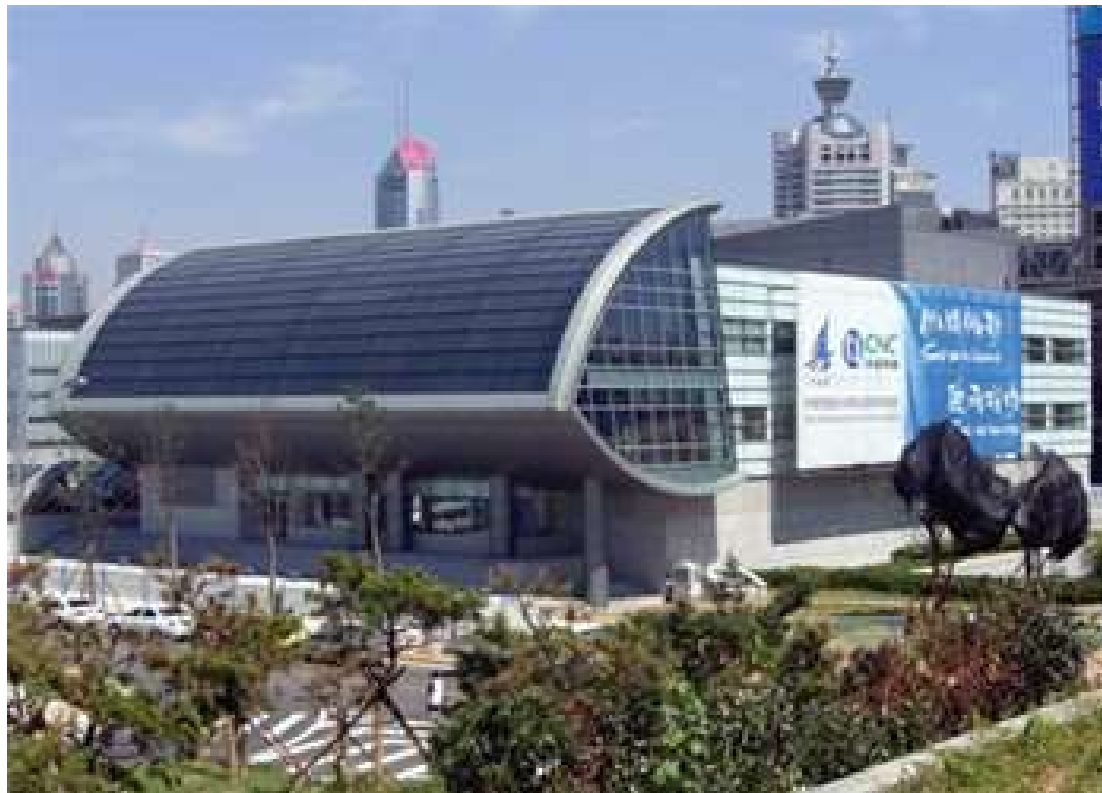


SOLID

Digicel Jamaica

High School Arizona

SOME OF THE LARGEST PROJECTS IN SOLAR THERMAL ENERGY AND COOLING FROM AUSTRIA



Solar thermal system for 2008 Olympic Games in Beijing

Hot water, heating systems support and solar cooling as an architectural feature

SOLID

 **Bundesministerium**
Nachhaltigkeit und
Tourismus

HEAT PUMP

**HIGHLY EFFICIENT USE OF ELECTRICITY
FOR HEAT PRODUCTION**

[bmnt.gv.at](https://www.bmnt.gv.at)



www.umwelttechnik.at

AUSTRIA'S ELECTRICITY MIX COUPLED WITH EXCELLENT HEAT PUMP TECHNOLOGY FOR MAXIMUM EMISSION SAVINGS

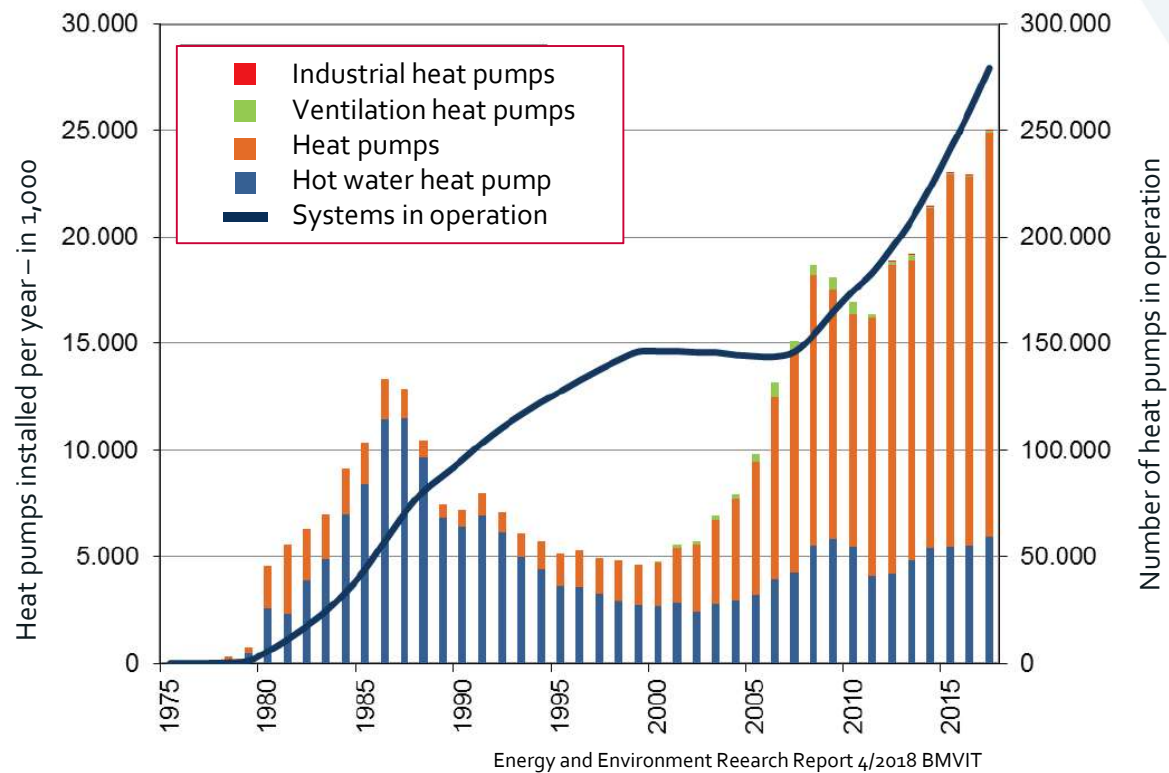
- Total sales in the heat pump sector 2017:
 - € 321.2 million
 - 1,388 jobs in this sector
- Heat pumps in operation in Austria in 2017:
 - Over 280,000 heat pumps installed in Austria
 - 608,995 t CO₂ avoided



Heliotherm

A HEAT PUMP COUNTRY AS A SPACE FOR INNOVATION

Market development of heat pumps in Austria from 1975 to 2017 – in units



Driver:

Building control regulation
through increasing building
energy efficiency and market
development of photovoltaics
(often used in combination)

PIONEERING WORK IN NEW GENERATIONS OF HEAT PUMP TECHNOLOGY



Example high temperature heat pump Source: Frigopol

Austria's technology leader
Ochsner employs about 180 people with an
R&D quota of 5 %

(status 2018, ecotechnology.at)

Heat pump systems for single housing units
right up to large buildings and industrial
applications

- High R & D intensity and award-winning company
- Current focus of research: High-temperature heat pumps for industry

STATE PRIZE²⁰¹⁸ ENVIRONMENT AND ENERGY TECHNOLOGY



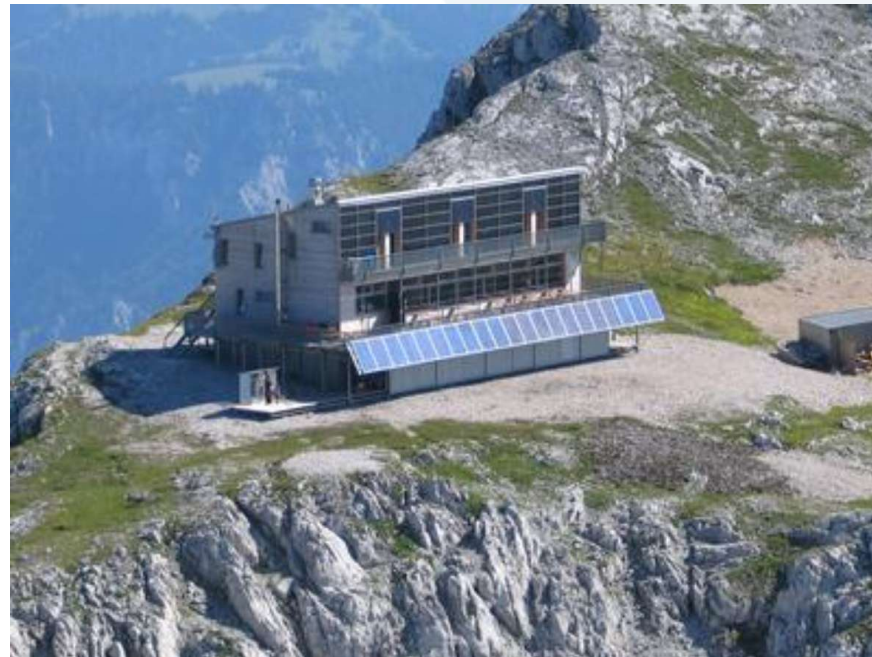
- ecop Technology was awarded in the category environment, climate and energy
- Rotation heat pump– uses rotation as a physical process for heating and cooling

 Bundesministerium
Nachhaltigkeit und
Tourismus

PASSIVE HOUSES

**THE HIGHEST DENSITY OF PASSIVE HOUSES AROUND THE
WORLD**

bmnt.gv.at



Robert Freund auf www.klimaaktiv.at

**REDUCING HEATING DEMAND TO CLOSE TO ZERO EVEN IN A
HARSH CLIMATE IS A GREAT ACCOMPLISHMENT**

- 17% of CO₂ emissions come from heating demand in the building sector
- 12 million m² passive house surface in Austria
- Yearly avoidance of 140million l of heating oil



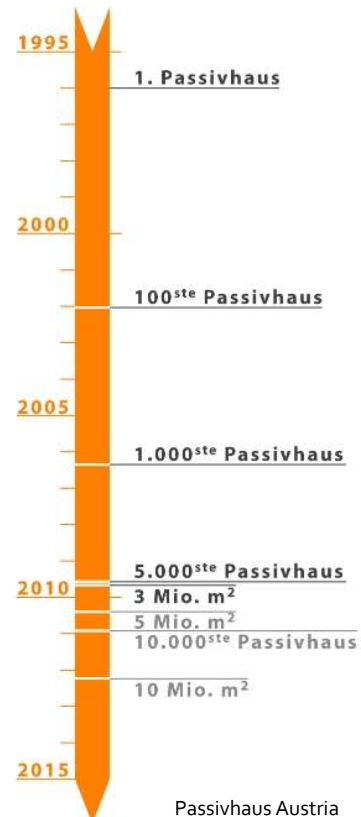
Kaltenegger Architects, Eisenberger



Kaunertal valley, Tyrol

- Targeted programs and lines of research
- Reference projects
- Reduction of the heating demand of buildings by residential building regulations and grants

EVERY FOURTH PASSIVE HOUSE BUILT IS IN AUSTRIA



- Concept was proactively taken up as early as 1994
- First passive house built in 1996
- By 2010: around 6,000 passive houses in Austria
 - Compared to 50 in the whole of North America
- By 2013: around 14,000 passive houses in Austria

*(Estimate IG Passivhaus Plus, counting stopped)

AUSTRIA HAS THE WORLD'S HIGHEST DENSITY OF PASSIVE HOUSES



Austria House as a gift to Canada
at the Olympic Games

Reiner, Eisenberger
Architects

AUSTRIA TAKES EXPERTISE IN ENERGY TO THE DESERTS OF SAUDI ARABIA

- Ground-breaking "Sheikh Zayed Desert Learning Center" flagship project
- BIPV, solar cooling, building control, LED lighting technology, planning and passive house technology from Austria



<http://estidama.upc.gov.ae/szdlc/>

- Austrian building technology

Certifications

- LEED (USA)
- ESTIDAMA (Arab Green Building Seal)

SOLAR DECATHLON: BUILDING CONCEPTS WITH INTERNATIONAL AWARDS

- International, university competition for sustainable construction from the US Department of Energy
- Vienna University of Technology receives 1st place in 2013 in the building of the future category



TU-Wien, Solardeathlon.at

AUSTRIA: THE HIGHEST QUALITY OF LIFE INTERNATIONALLY AND A SMART CITY PIONEER



Wien, Seestadt aerial photograph, C.Fürthner_MA18



www.smartcitygraz.at



Sinfonia Innsbruck, Standortagentur Tirol
Source: Standortagentur Tirol

- Vienna has been chosen for the 9th time as the city with the highest quality of life (Mercer study 2018)
- 10% of EU Smart City projects are in Austria

BIOMASS – (PELLETS)

**ABUNDANCE OF FORESTS IN
AUSTRIA, ADVANCED BIOMASS
TECHNOLOGY FOR WORLD
MARKETS**



BMNT, Alexander Haiden

AUSTRIA, THE LAND OF FORESTS AND ADVANCED BIOMASS TECHNOLOGIES



BMNT, Alexander Haiden

- 50% of the national territory is covered by forests
- 30.4 m reserve solid cubic meters regrow annually
- 17.4% of all heating systems are based on biomass (wood)

BIOMASS CREATES JOBS AND REDUCES EMISSIONS

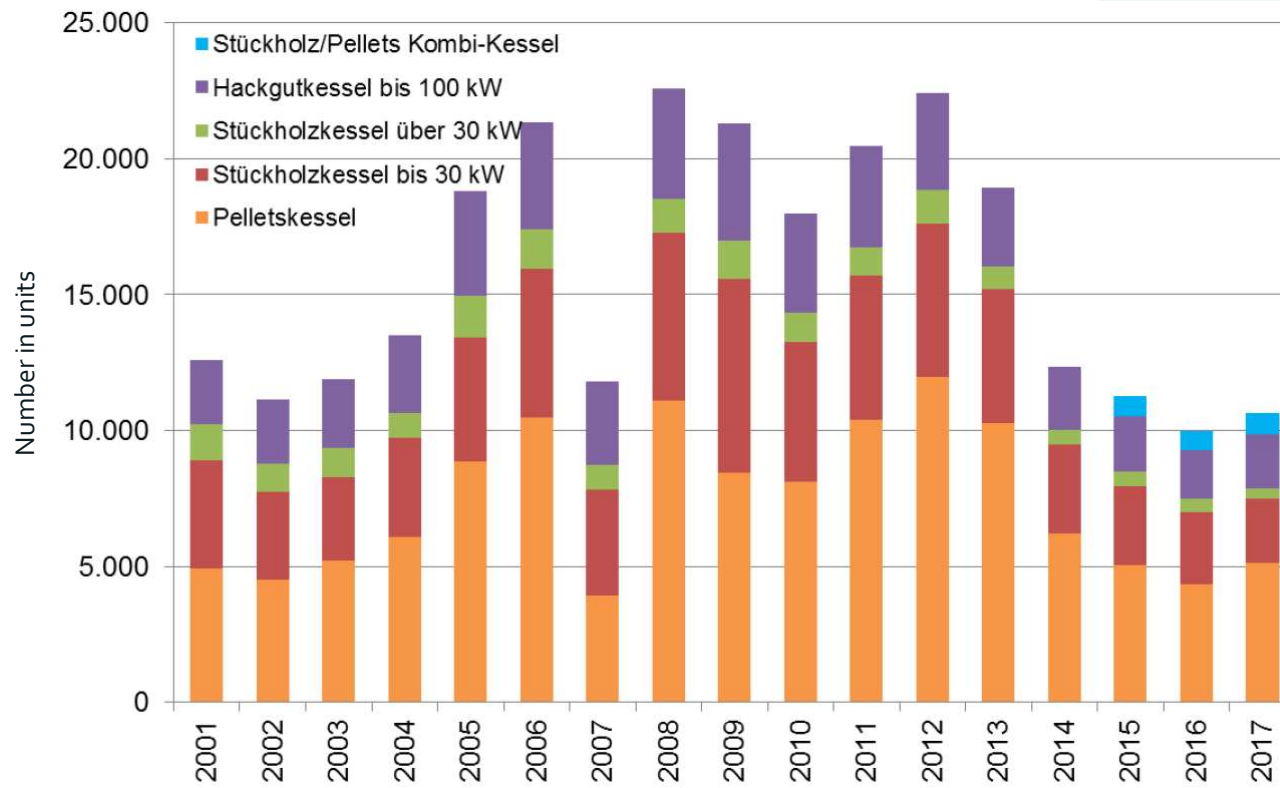


BMNT, Alexander Haiden

The use of biofuels in 2017 yielded:

- 10 million tonnes of CO₂ savings
- € 1,606 million turnover in the sector
- 19,000 jobs
- Trend: continually increasing

DEVELOPMENT OF BIOMASS BOILERS IN AUSTRIA



Energy and Environment Research Report 4/2018 BMVIT

- Turnover € 863 million
- Job effect 3,600 FTE

AUSTRIA HAS LEADING ROLE IN THE GLOBAL MARKET FOR PELLET PRODUCTION



<https://www.andritz.com/products-en/feed-and-biofuel/feed-biofuel/pellet-mills-biomass>



<http://www.teccon.at/pdf/PELLETTURM.pdf>

- 2/3 of the pellet boilers installed in Western Europe come from Austria
- Leading manufacturers of equipment for the production of pellets come from Austria

HYDROELECTRIC POWER

**A MAIN PILLAR OF POWER
GENERATION IN AUSTRIA AND
TECHNOLOGY LEADER IN THE
WORLD MARKET**



BMNT, Alexander Haiden

HYDROPOWER – PUBLIC AWARENESS AND STRICT LEGISLATION CREATE SUCCESS



Klimafonds/Ringhofer

- Broad acceptance among the population through environmentally compatible power plants
- Environmentally compatible use of hydropower through the EU Water Framework Directive
- Firmly rooted in the regional economy

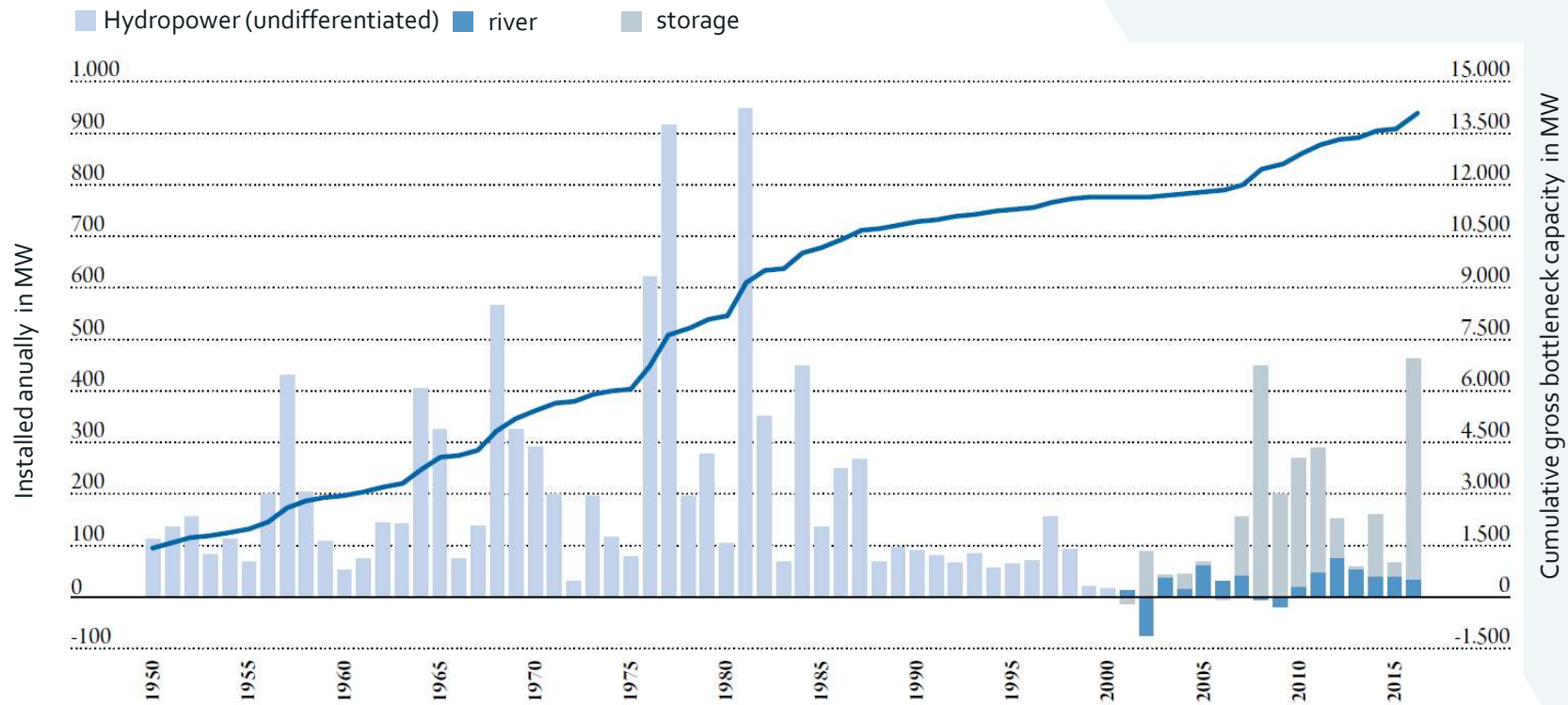
HYDROPOWER IN AUSTRIA - THE MAIN PILLAR OF RENEWABLE ENERGY PRODUCTION



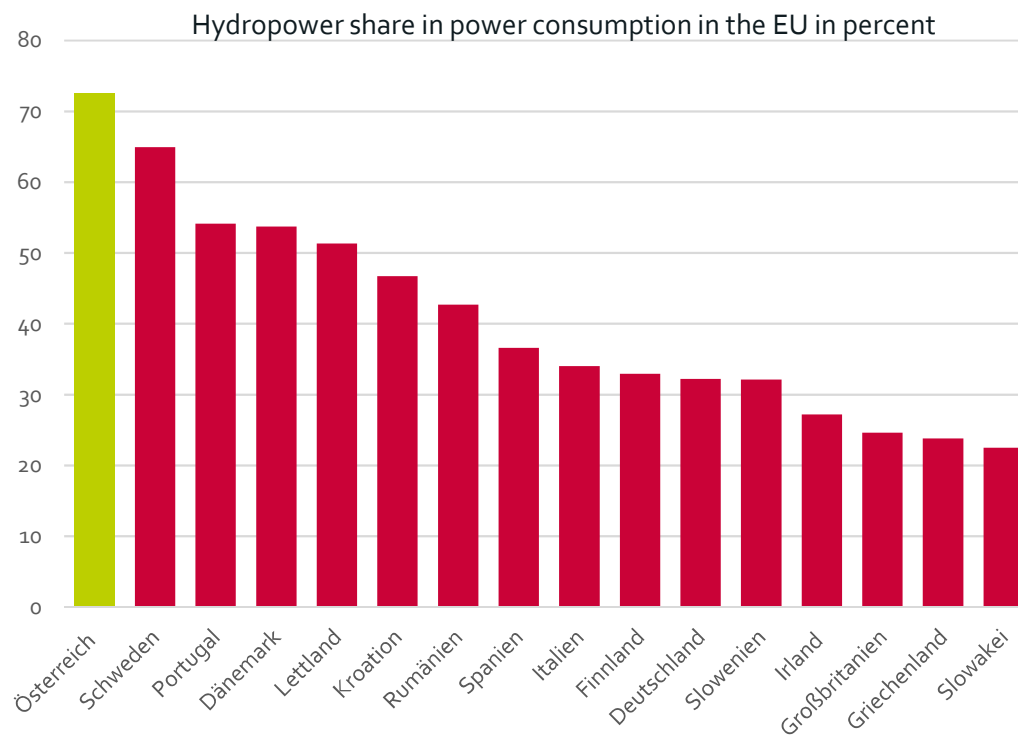
Andritz

- € 2,000 million in sales
- 6,784 jobs
- Potential expansion of hydropower by 2030: around 8 TWh

HYDROPOWER IN AUSTRIA– DEVELOPMENT SINCE 1950



AUSTRIA IS LEADING IN HYDROPOWER ENERGY PRODUCTION



Source: Statistik Austria

- Total capacity of 14.1 GW
- 160 large and 3,000 small hydropower plants
- 6 million t of CO₂ savings
- Highest level of expertise in planning, provision and operation of power generation plants

AUSTRIA GUARANTEES SUPPLY SECURITY

- Pumped storage power plants for efficient energy storage
- Compensation of seasonal and daily fluctuations of other renewable energy sources
- Pumping capacity of around 8,500 MW installed



Verbund

COMPONENTS FOR HYDROELECTRIC POWER PLANTS SUCCESSFULLY POSITIONED IN THE GLOBAL MARKET THROUGH YEARS OF EXPERIENCE

- Turbines from Austria are used in the world's largest power plants
 - Large projects in Turkey, India, Norway, South Korea, Sri Lanka, Iran, Guatemala
- Turnkey power plants from Austria are exported worldwide
- Area of greatest current relevance: revitalizing existing plants worldwide

(Potentials for growth and expansion of renewable energy systems, 2012)



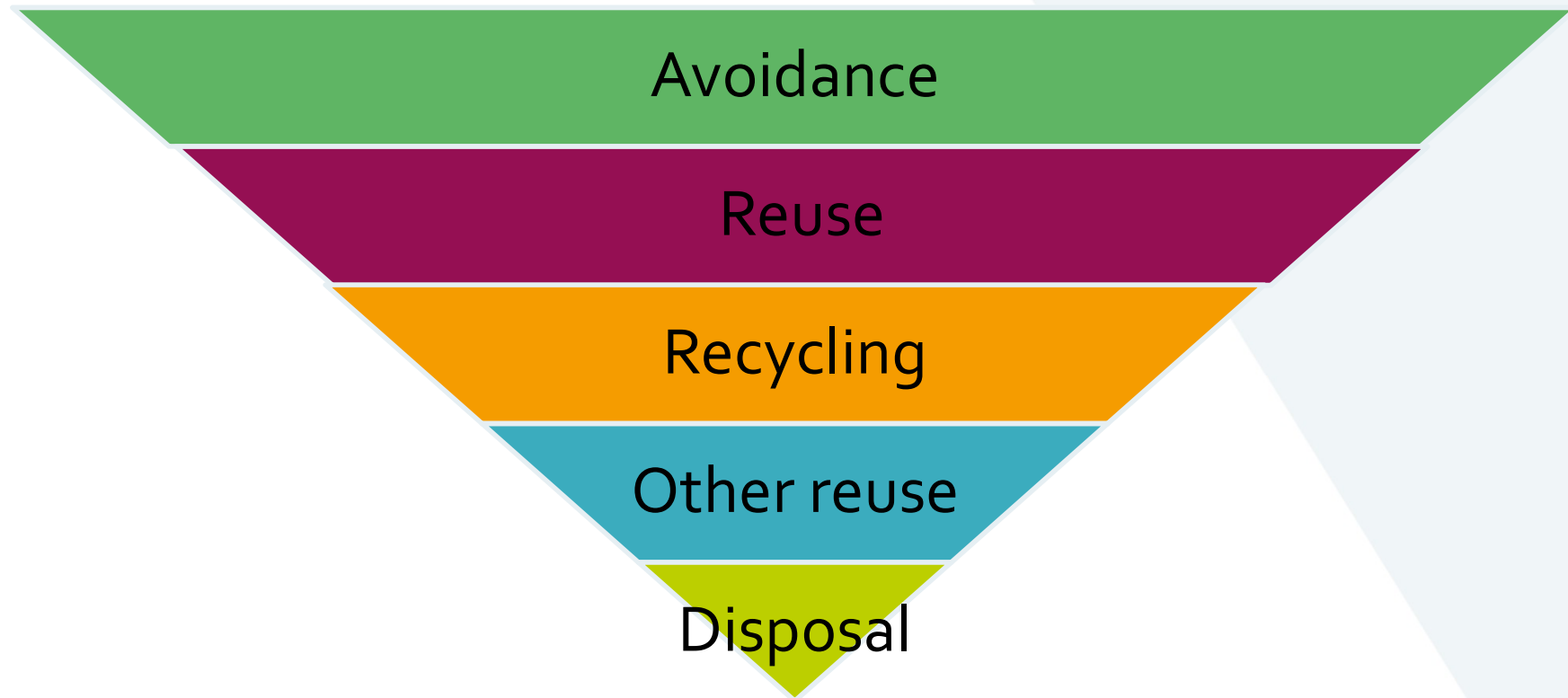
dieindustrie.at/Mathias Kniepeiss

WASTE MANAGEMENT AND RECYCLING ECONOMY

CONVERTING WASTE TO
VALUABLE RESOURCES WITH
AUSTRIAN PRODUCT AND
SERVICE INNOVATION



AUSTRIA'S WASTE MANAGEMENT IN PRACTICE



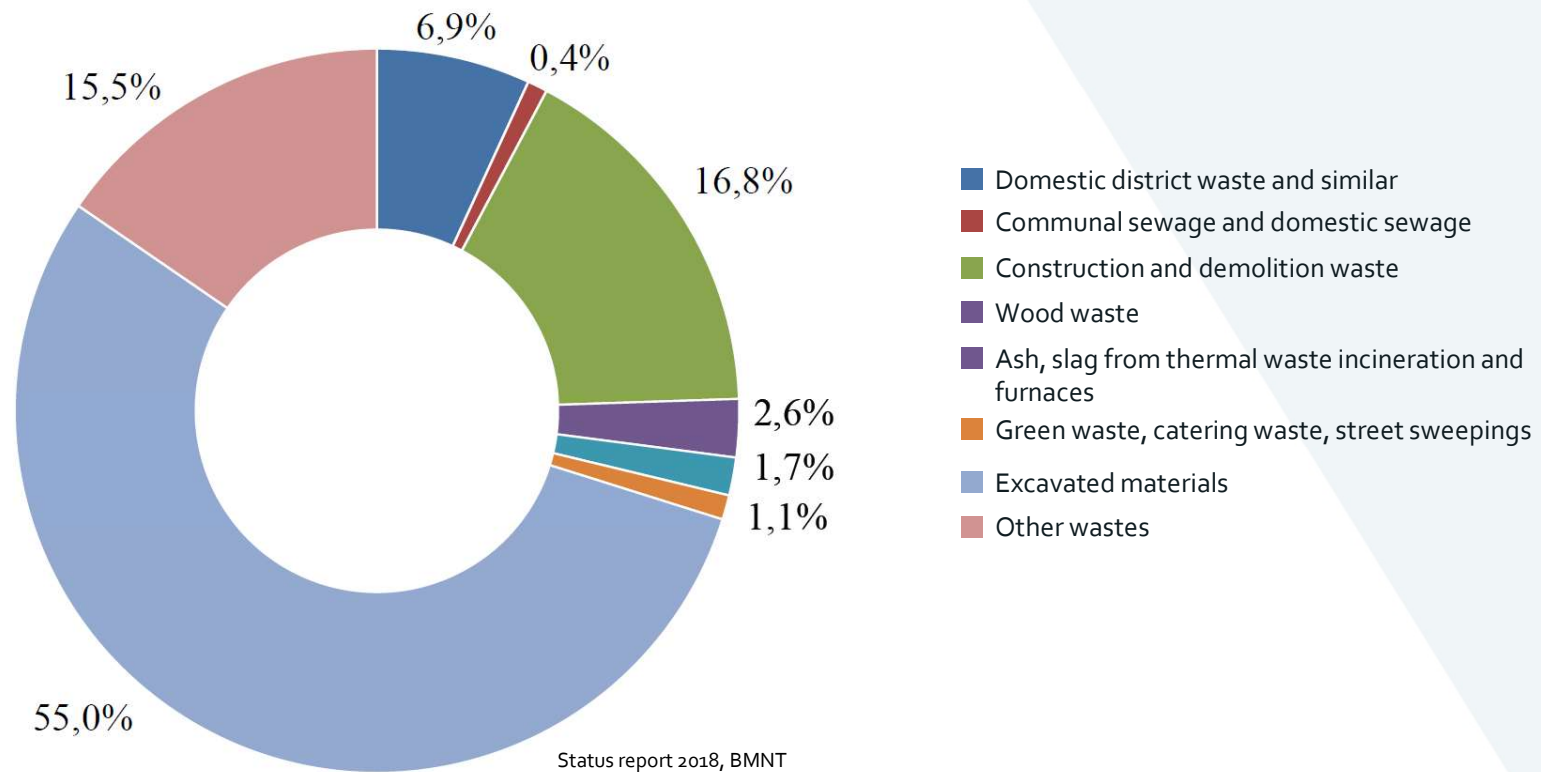
THE SUCCESSFUL STRATEGY OF PREVENTION AND RECOVERY



Wien Energie

- Closing of material cycles
- Push eco-innovation
- Responsibility of producers
- Keeping the population well informed
- Substitution of materials
 - NAWARO action plan of the BMNT
- Monitoring of material flows
- Development and promotion of clean production processes
- Return and recycling systems

WASTE IN AUSTRIA - SHARES OF RECOVERY, UTILISATION



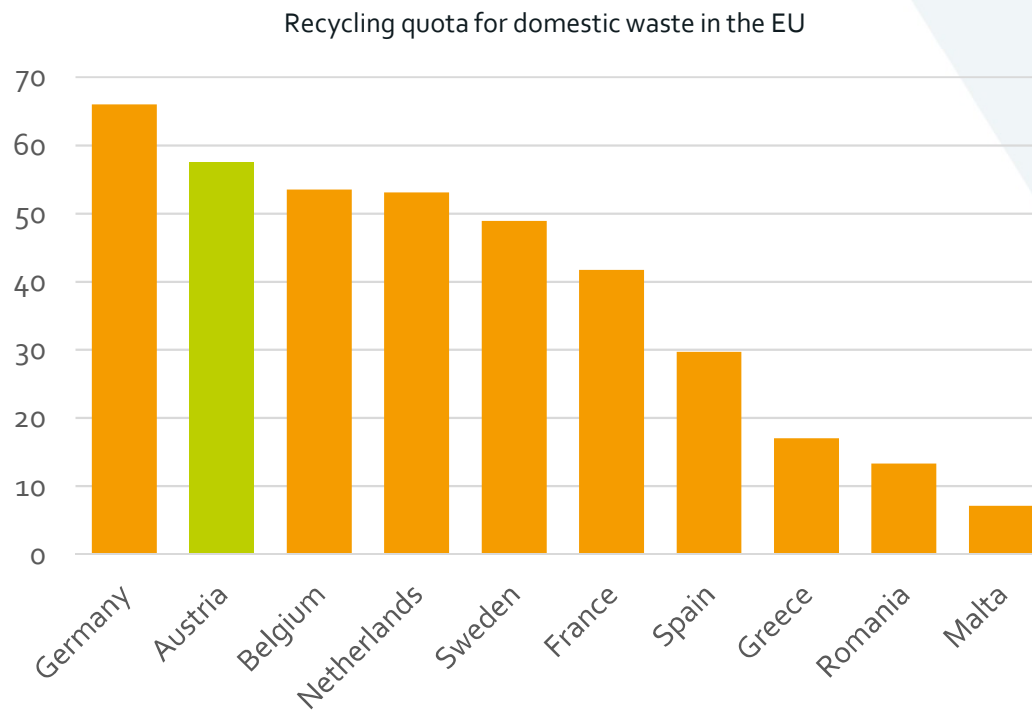
INNOVATIVE LEGISLATION AND RAISING AWARENESS LEAD TO UNIQUE COLLECTION SYSTEMS AND TECHNOLOGIES



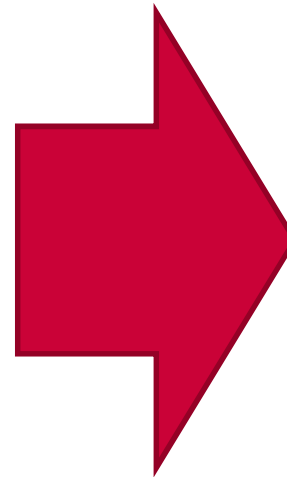
Saubermacher

- Waste Management Act whereby disposal is not subsidised
 - Precautionary principle
- Public relations raises awareness for waste reduction and separation in the population

WASTE MANAGEMENT – AUSTRIA IS AMONGST LEADERS IN RECYCLING IN EUROPE



FROM WASTE TO RESOURCE



ARA

- Separate collection of recyclable waste streams such as biodegradable waste, packaging waste, construction waste, etc.

WASTE MANAGEMENT ACT HAS CREATED SUCCESSFUL RECYCLING SYSTEMS



ARA

- More than 1 million tonnes of packaging waste and waste paper are collected per year
 - 96% of the total packaging brought into circulation
 - 90% is converted to new products or packaging
 - The remainder is used for energy recovery (e.g. district heating)
 - Almost no landfilling
- More than 500,000 t CO₂ saved annually

THERMAL TREATMENT AND ENERGY PRODUCTION INSTEAD OF DISPOSAL



Wien Energie

- Incineration plants for municipal waste:
 - 2.6 million t/a
- Other equipment for heat treatment:
 - 1.7 million t/a
- Prerequisites: Appropriate legal basis and standards such as
 - Waste Incineration Regulation
 - Rules for sampling, sample preparation and analysis

FROM INNOVATIVE HOME MARKET TO THE WORLD MARKET LEADER IN RECYCLING PLANTS



- World market leader in plastic recycling systems
- World market leader in glass recycling systems
- Global Player in biomass comminution, separation and sorting
- World market leader in mobile processing plants for construction waste and debris

WATER POLLUTION CONTROL

**THE BEST DRINKING WATER, CLEAN RIVERS AND LAKES THANKS
TO THE LATEST TECHNOLOGY**



BMNT/Alexander Haiden

 **Bundesministerium**
Nachhaltigkeit und
Tourismus

LEGISLATION ENSURES OUTSTANDING QUALITY AND PROVIDES ECONOMIC STIMULATION

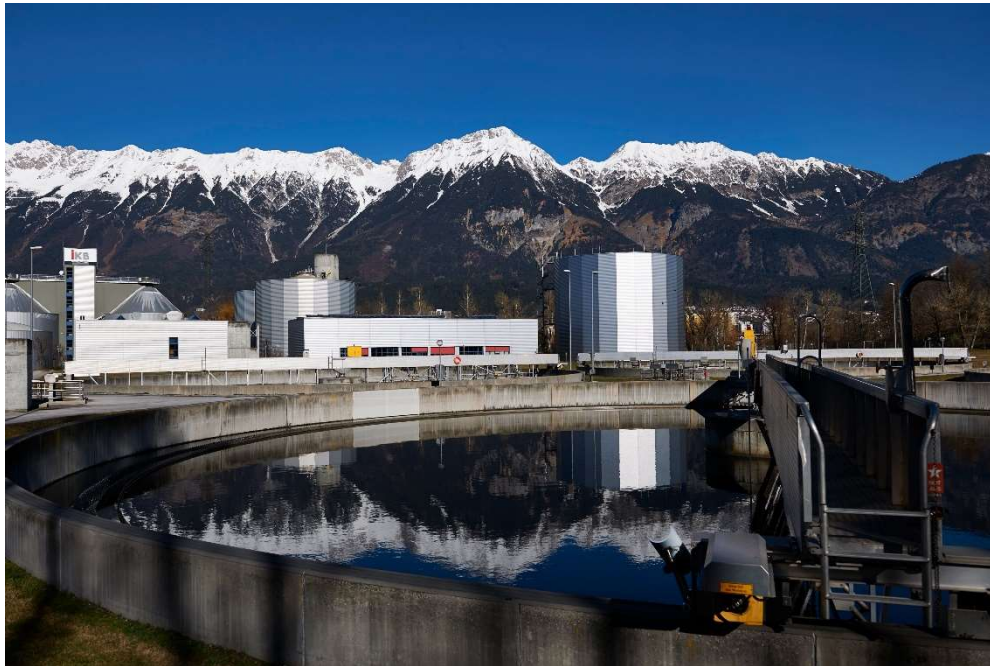
- Comprehensive measures for water pollution control since 1960's
- € 45 billion funding since 1960 for public wastewater, mixed and storm water drains and more than 1.600 public sewage treatment plants
- Expertise established in Austrian companies and new technologies developed in accordance with strict legislation



BMNT/Alexander Haiden

RESPONSIBILITY FOR WATER RESOURCES IN TERMS OF QUALITY AND SUPPLY

- Average rainfall of 1,100 mm per year



BMNT/Alexander Haiden

- 95% of the population are connected to public sewage system
- More than 1.600 treatment plants clean wastewater
- BOD > 98%
- COD > 92%
- Nitrogen > 80%
- Phosphorus > 90%

THE HIGHEST QUALITY OF WATER IN RIVERS AND LAKES IN AUSTRIA IS LINKED TO VALUE CREATION AND INNOVATION

- Every year, domestic water management companies generate around
 - € 300 million in sales
- More patent applications in the area of water and wastewater as part of environmental technology patents than Germany or the whole of the EU, in 2014. (Source: ETH-Zürich)

- Supply with drinking water:
 - 50% from springs / 50% from ground water



BMNT/Alexander Haiden

AUSTRIA SUPPLIES THE WORLD WITH THE MOST ADVANCED TECHNOLOGY FOR CLEAN WATER

The then largest treatment plant for the C-tech method was built in Jelutong in Malaysia.

- Cyclic Activated Sludge Process
- 600,000 m³ of wastewater per day
- Capacity for 1.2 million inhabitants



WABAG, www.wabag.com



Advantage Austria

Algeria's largest and Africa's second largest municipal wastewater treatment plant

- 270,100 m³ wastewater per day

INNOVATION²: A WATER TREATMENT PLANT WITH COGENERATION REDUCES THE CO₂ BALANCE

- Wastewater treatment for 1 million people in Saudi Arabia
- 200,000 m³ per day
- Biogas is generated from sewage sludge
- Biogas provides power for operation



AN ABUNDANCE OF WATER CAN BE A HAZARD - RISK MANAGEMENT TO PROTECT THE POPULATION AND THE ECONOMY



- Two floods at hundred-year level in 2002 and 2013 with highest level of the Danube 2013
 - Austria's exposure increased due to climate change
- Damage in 2013 significantly lower by forward-looking risk management
 - Protective structures are closely coordinated with neighbouring states

AIR POLLUTION CONTROL - AN IMPORTANT ECONOMIC FACTOR IN AUSTRIA

- Air pollution control technology: Production of equipment, technologies and specific materials
 - Catalyst preparation is the most important production area
 - Dust collectors & dust collection systems
 - Aerators
- Austrian companies offer a variety of solutions
 - Filter systems, catalytic post-treatment systems, thermal recuperator, methods for emission reduction and particulate filters for cleaning the exhaust air arising from different industrial processes.



CTP-Air Pollution Control



CTP-Air Pollution Control

 **Bundesministerium**
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bmnt.gv.at

AIR POLLUTION CONTROL - INDUSTRY AND CLEAN AIR GO HAND IN HAND

Bauxite digestion - particle and alkali containing
gases in metallurgy



<http://www.ctp-airpollutioncontrol.com/anwendungen/integrierte-loesungen/partikel-und-alkali/>

Europe's cleanest sinter plant in Linz



<http://www.voestalpine.com/stahl/Was-uns-bewegt/Was-uns-bewegt-hat/DeNOx-Anlage-der-voestalpine>

THE BEST AIR QUALITY SHOWS THE SUCCESS OF THE AUSTRIAN ENVIRONMENTAL POLICY

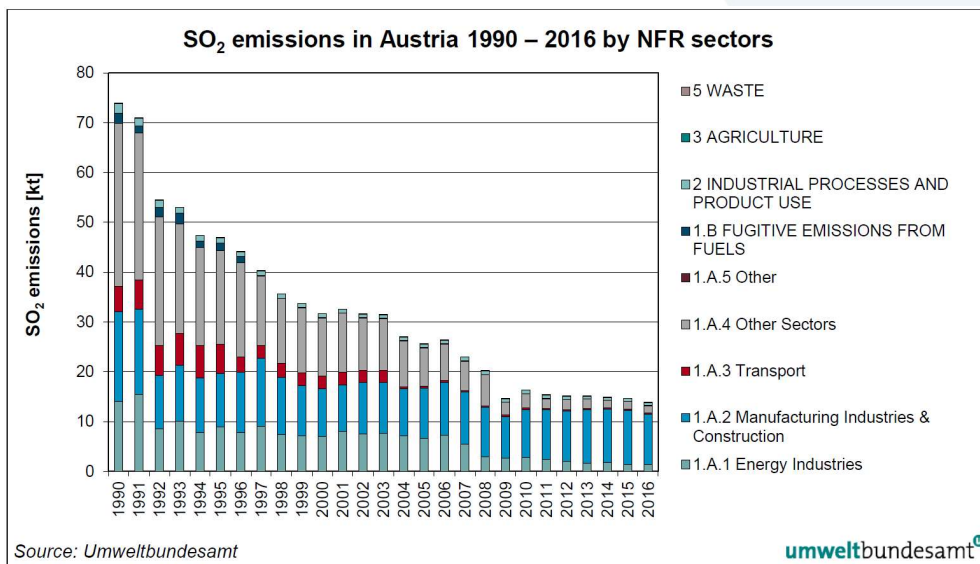


BMNT/Alexander Haiden

- Annual air pollutant inventory by the Federal Environment Agency
- Current initiative example: "Energy revolution campaign" of the BMNT

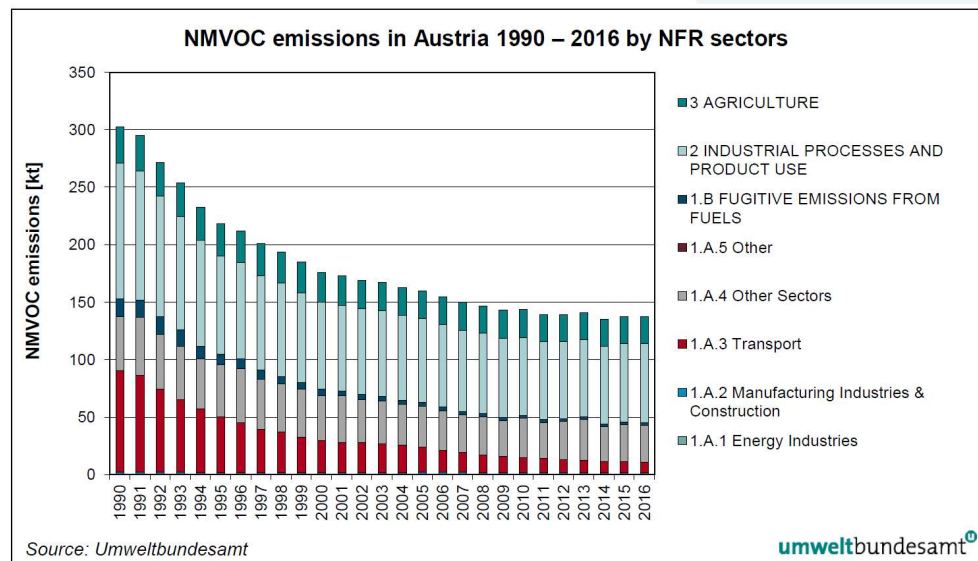
BEST AIR QUALITY - SIGNIFICANT DECREASE IN EMISSIONS IN RECENT YEARS

- Sulphur dioxide (SO₂), nitrogen oxides (NO_x), ammonia (NH₃) and organic compounds without methane (NMVOC)
 - Binding limit within the EU member states
- Very successful actions: up to 81% reduction in Austria since 1990
 - SO₂ : -81% since 1990



BEST AIR QUALITY - SIGNIFICANT DECREASE IN EMISSIONS IN RECENT YEARS

- Sulphur dioxide (SO₂), nitrogen oxides (NO_x), ammonia (NH₃) and organic compounds without methane (NMVOC)
 - Binding limit within the EU member states
- Very successful actions: up to 81% reduction in Austria since 1990
 - NMVOC: -55% since 1990





[dieindustrie.at](https://www.dieindustrie.at)/Mathias Kniepeiss



BMNT/Hollinger



BMNT/Paul Gruber

**AMBITIOUS ENVIRONMENTAL POLICY
SUCCESSFUL COMPANIES
A CLEAN ENVIRONMENT FOR OURSELVES AND OUR CHILDREN**

 **Bundesministerium**
Nachhaltigkeit und
Tourismus

THANK YOU FOR YOUR ATTENTION



BMNT/Bernhard Kern

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