



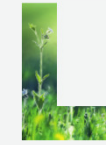
**MINISTERIUM
FÜR EIN
LEBENSWERTES
ÖSTERREICH**

bmlfuw.gv.at

GREEN TECH AND THE AUSTRIAN APPROACHES TOWARDS PROMOTING ECO-INNOVATION



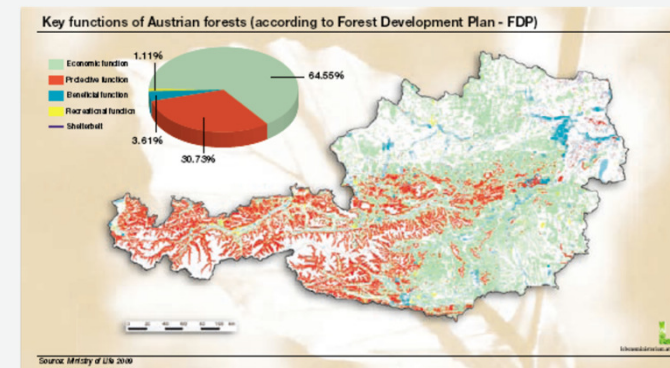
AUSTRIA



MINISTERIUM
FÜR EIN
LEBENSWERTES
ÖSTERREICH

Mittwoch, 03. Dezember
2014

Approx. 8.3 Mio. Inhabitants
Federal republic with 9 regions
Approx. 84.000 km²
Approx. 47 % forest land



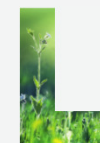
GREEN JOBS IN AUSTRIA:

An enormous potential for economic recovery and for green jobs rests with the increase in energy efficiency, energy saving, the consistent further development of renewable energy technologies and with investments in innovative environmental technologies.

About 173,702 persons in Austria are working presently in green jobs; this concerns 4,8% of total employees and 35,8 Billion Euro environmental turnover.

Austrias Green Technologies Success Stories

Leading Marketposition in Passivhouse Technologies, in Solar Thermal Technologies, in Biomass Heatingsystems, in Waste Management (Wastecollection, Treatment etc.) / and Water Management.



AUSTRIA'S VISION

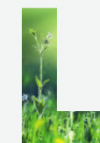
Austria takes the leadership in development, implementation and export of environmental technologies within the European Union. Austria currently is amongst the top countries and shall extend its leadership in selected technological issues.

Promotion of exports (Targeted initiatives on specific export markets and further development of the existing export infrastructure for Austrian enterprises.)

Research and qualification (Strengthening the technological competitiveness and qualifying the staff members of enterprises and research institutions.)

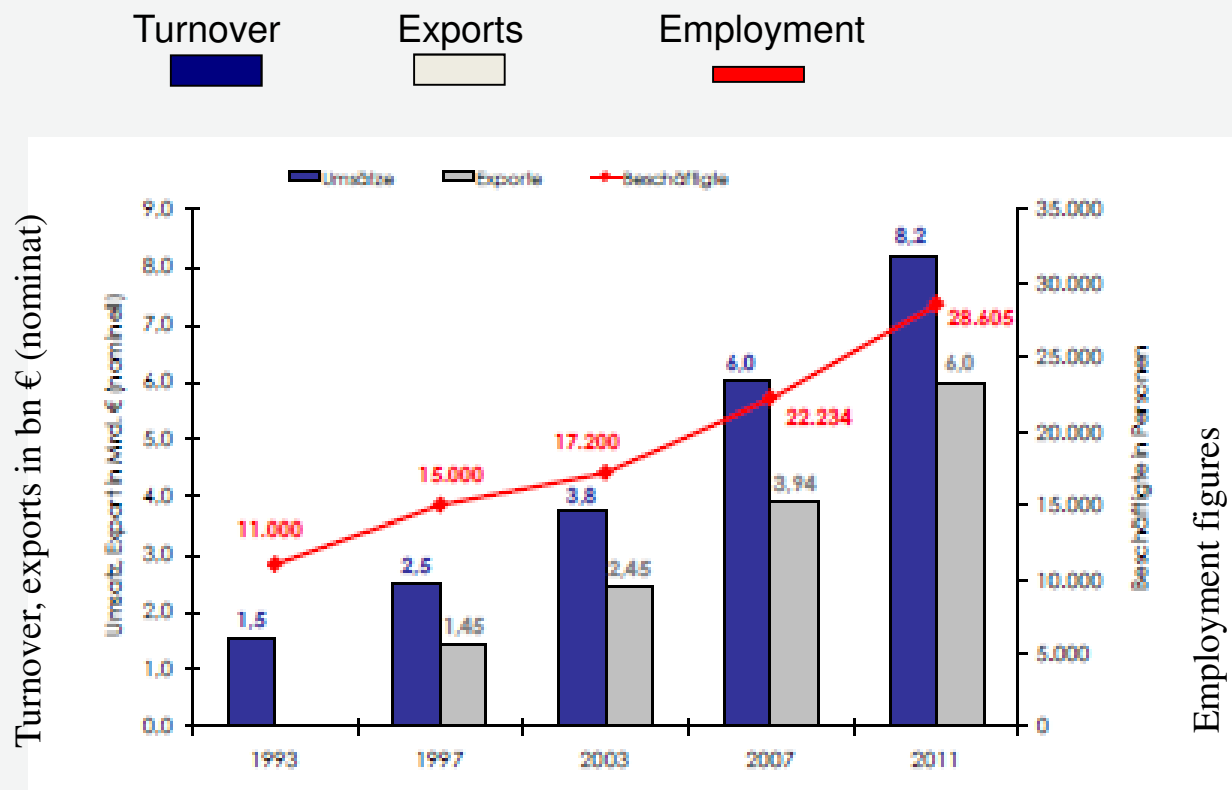
Financing (Supplementing technological solutions and services with customer-specific financing offers.)

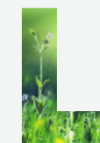
Making the domestic market more dynamic (Safeguarding an innovative domestic market for products and services at a high technological level.)



Mittwoch, 03. Dezember
2014

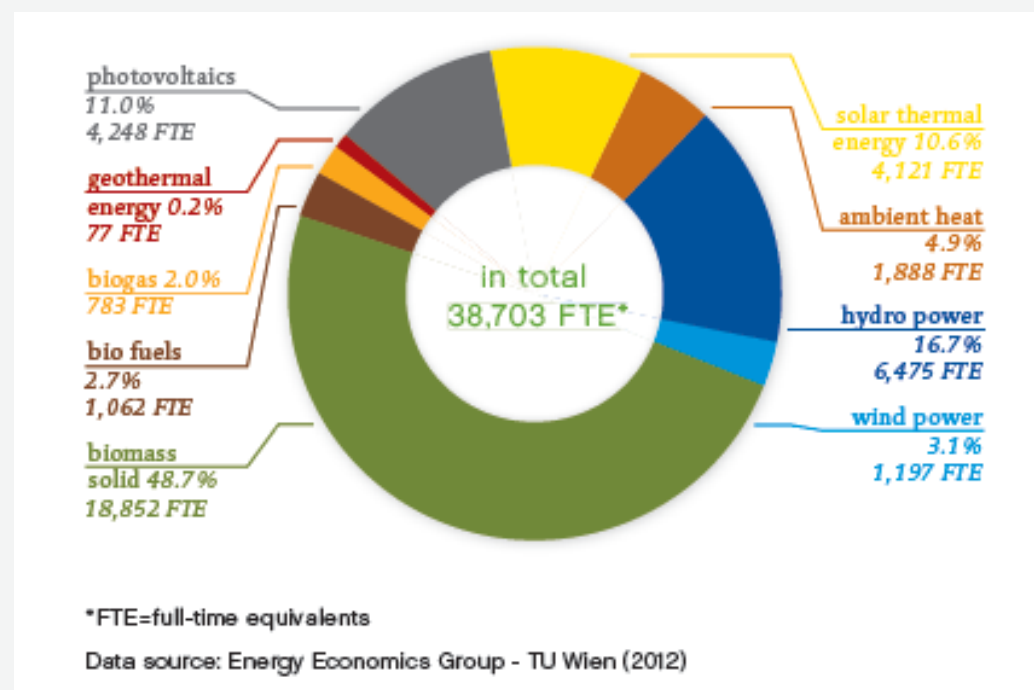
THE AUSTRIAN ENVIRONMENTAL TECHNOLOGY INDUSTRY (1993 TO 2011, without the service sector)





Mittwoch, 03. Dezember
2014

EMPLOYMENT EFFECTS OF GREEN INDUSTRY BY RENEWABLE TECHNOLOGY - 2012



AT Goals for 2020: Renewable: 34 %
Efficiency: + 9 % Biofuels: 10 %

→ http://www.bmlfuw.gv.at/publikationen/umwelt/energie/renewableenergy_fact.html



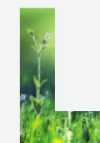
MINISTERIUM
FÜR EIN
LEBENSWERTES
ÖSTERREICH

Mittwoch, 03. Dezember
2014

AUSTRIAN MINISTRY OF AGRICULTURE FORESTRY, ENVIRONMENT AND WATER MANAGEMENT STRATEGIC INITIATIVES

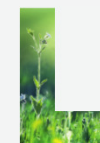


- **Master Plan Environmental Technology” as well as the Master Plan Green Jobs”(Strategy documents)**
- **klima:aktiv, the climate protection campaign of the Ministry**
- **Austrian Eco-label**
- **State Prize for Environmental and Energy Technology**
- **Motivator for the public sector (Green Public Procurement)**
- **EMAS etc.**



AUSTRIAN POLICY TOOLS AND TAXES

- **European economic incentives (like for example the European trading scheme (ETS))**
- **Regulations:**
 - Construction norms (Efficiency norms for new houses: regional regulations for construction requires thermal insulation and renewable energy, Energy passport for existing buildings)**
 - Energy efficiency act (2014)**
 - Obligation of energy audits for large companies**
- **Taxes:**
 - Tax reduction for biofuels, recovery for insulation as well as on fossil fuels**



AUSTRIAN ECONOMIC INCENTIVES:

- **Subsidies**

Green tariffs for electricity

Innovative energy and climate projects (150 Mio. €) like mobility projects (electric vehicles), smart city approaches, highly innovative energy efficiency projects, funding for private photovoltaic devices (up to 5 kW) etc.

Environmental subsidy scheme (90,238 M€) (Approx. 45 - 50 M€ for renewable energy, 98 % of all funded projects are climate relevant, approx. 20 different priorities for GHG reduction measures (with own information sheets and application forms) → Enterprises: federal grants (mostly lump sums) for renewable energy → District heating: Up to 30 % grants for enterprises which build a district heating system, connected with a tough quality management system

Incentive programme like for instance for thermal insulation (100 Mio. € additional to regional subsidies, for private households and enterprises)



Mittwoch, 03. Dezember
2014

RENEWABLE ENERGY – EFFECTS

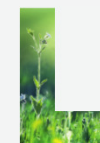
SHARE OF RENEWABLE ENERGY IN AUSTRIA IN 2012	percent
Total share of renewables	32.2%
Share of renewable electricity	65.3%
Share of renewable district heat	45.0%
Share of renewables in transportation	6.6%
Share of other renewables	29.6%



Austria has globally the highest density of passive houses.

The unparalleled know-how of our producers of heat pumps and biomass boilers (perfect for low energy or passive houses, often in combination with photovoltaic) is internationally recognized and appreciated

1.113 communities with over 2.5 million inhabitants have one common vision in Austria: an energy system that makes them independent from fossil fuels, providing them with sustainable energy and guaranteeing a healthy climate for future generations.



Mittwoch, 03. Dezember
2014

RENEWABLE ENERGY – EFFECTS

- Net effect on national economy: 80 €/GWh
- Net job effect: 1,6 employees/GWh
- Net revenue of the sector: 1,5 bn €/a (2006: 2,3 bn €)
- Employees of the sector: 39.000 (2006: 50.000)

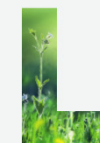
→ <http://www.bmlfuw.gv.at/en.html>

→ <http://www.ecolinx.at>



Since the 1950ies Austria's topographical conditions and its abundance in water resources have led to a continuous expansion of the hydropower capacities (share of hydropower 2012 in Austria 38%). In some segments, for example in the manufacturing of turbines, Austria is considered the market leader and technology leader across the globe.

Especially in the field of photovoltaic follow-up technologies (inverters, power electronics) and in the photovoltaic supplying industry (protective foils for solar modules) Austrian enterprises have become established at international level.



Mittwoch, 03. Dezember
2014

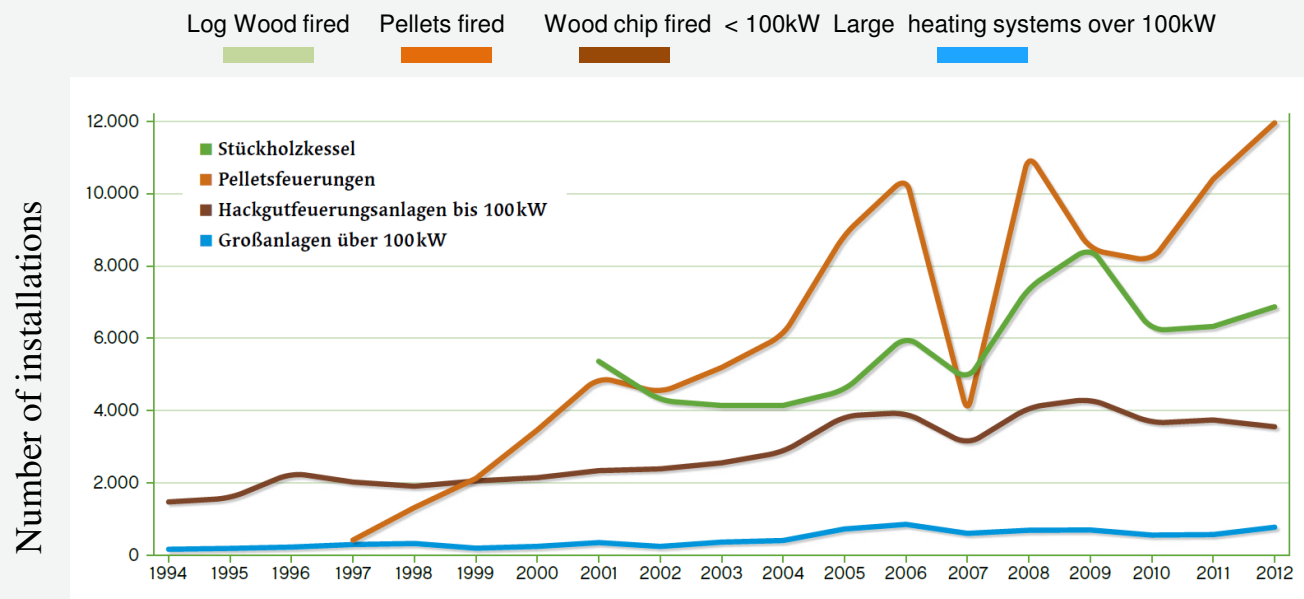
RENEWABLES IN AUSTRIA – EFFECTS

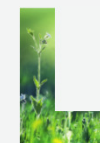
CO ₂ AVOIDANCE THROUGH RENEWABLE ENERGY	tons of CO ₂ equ
not including large-scale hydropower	15.83 Mio. t
including large-scale hydropower	29.80 Mio. t

Wind Power Plants: 763

Biogas Plants: 368

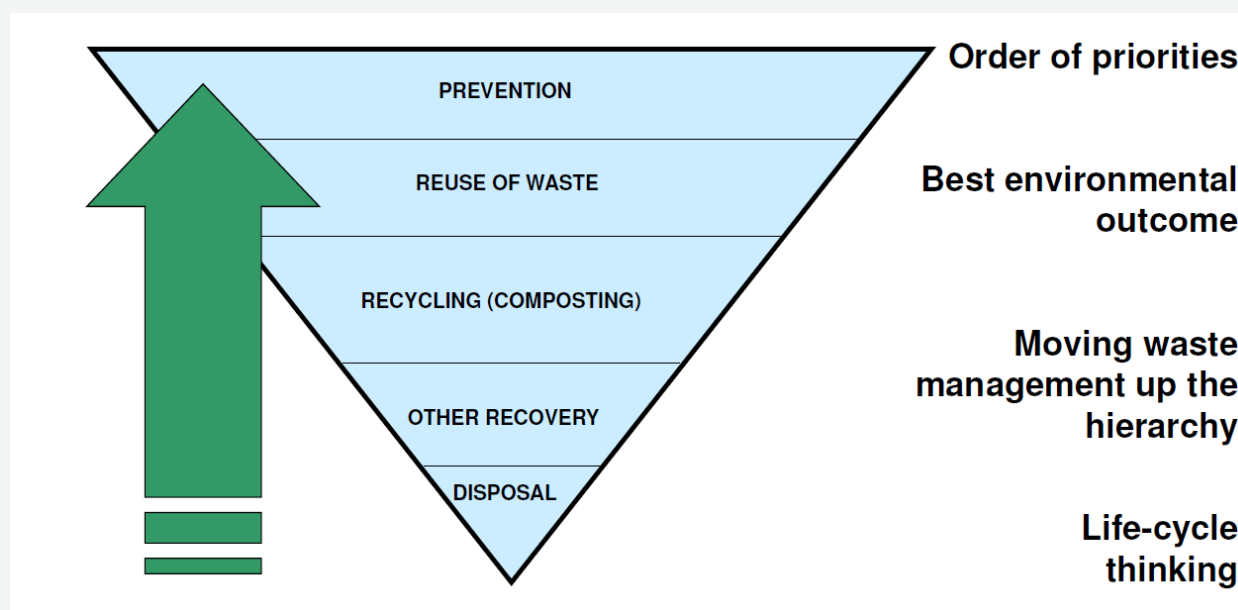
Development of biomass heating systems (yearly installations)

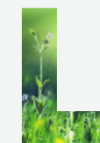




WASTE MANAGEMENT

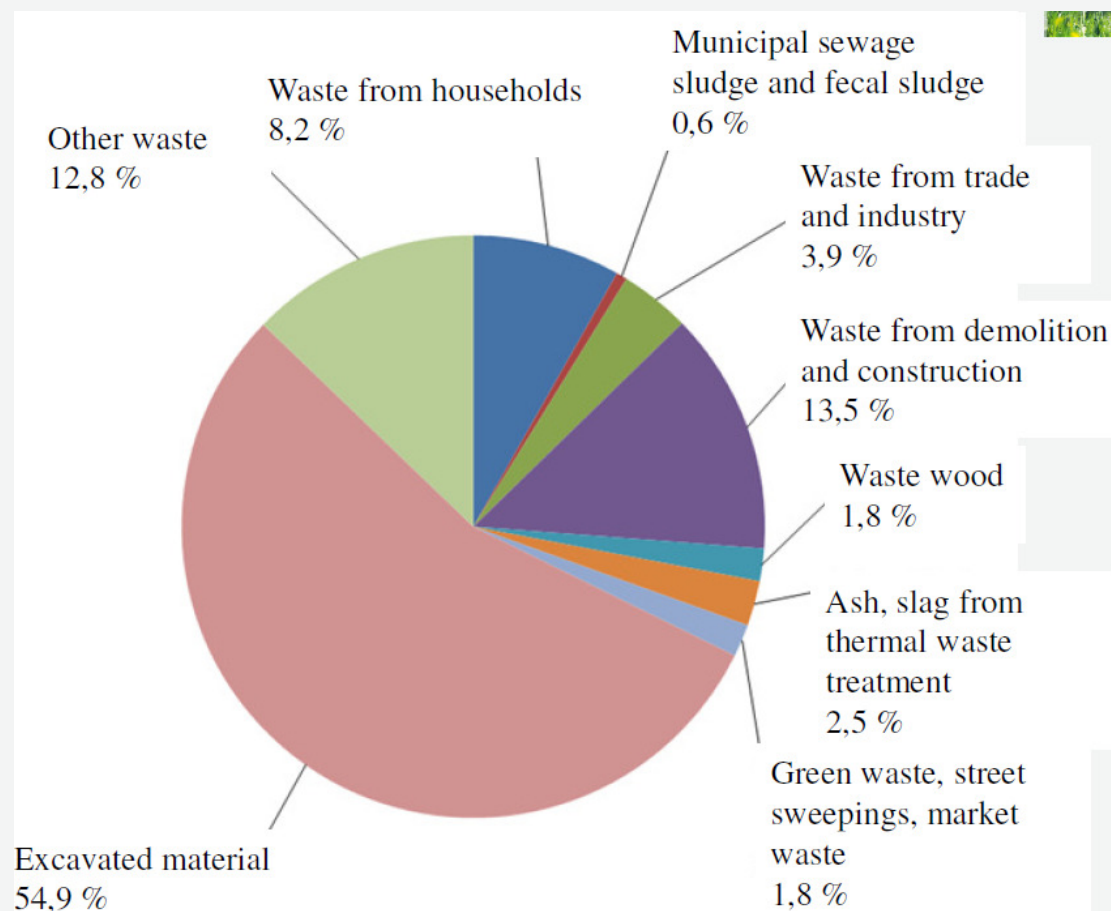
Austrian waste [management] hierarchy - principles





WASTE MANAGEMENT

Waste Composition – 48.8 Mio T



LEBENS
ÖSTERR



AUSTRIA'S STRATEGIES FOR RESOURCE MANAGEMENT BY WASTE PREVENTION AND RECOVERY

- **Closing of material cycles**
- **Substitution of materials**
- **Monitoring of material flows**
- **Conversion of processes for cleaner production**
- **Producer responsibility (product related measures)**
- **Take back and recycling**
- **Polluter pays principle**
- **(integrated costs)**



The heart of Austria's strategy is to take account of flows of material and goods and to include economic considerations and to make Austria's conventional waste management to a resource management.



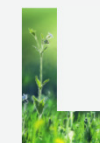
WASTE MANAGEMENT – EFFECTS

- Over 2100 recovery and disposal facilities in Austria.
- 11 waste incineration plants with a total capacity of approx. 2.5 million tonnes are currently in Austria in operation.
- Further information:
 - <http://www.bmlfuw.gv.at/en.html>
 - <http://www.ecolinx.at>



National waste management plan 2011:

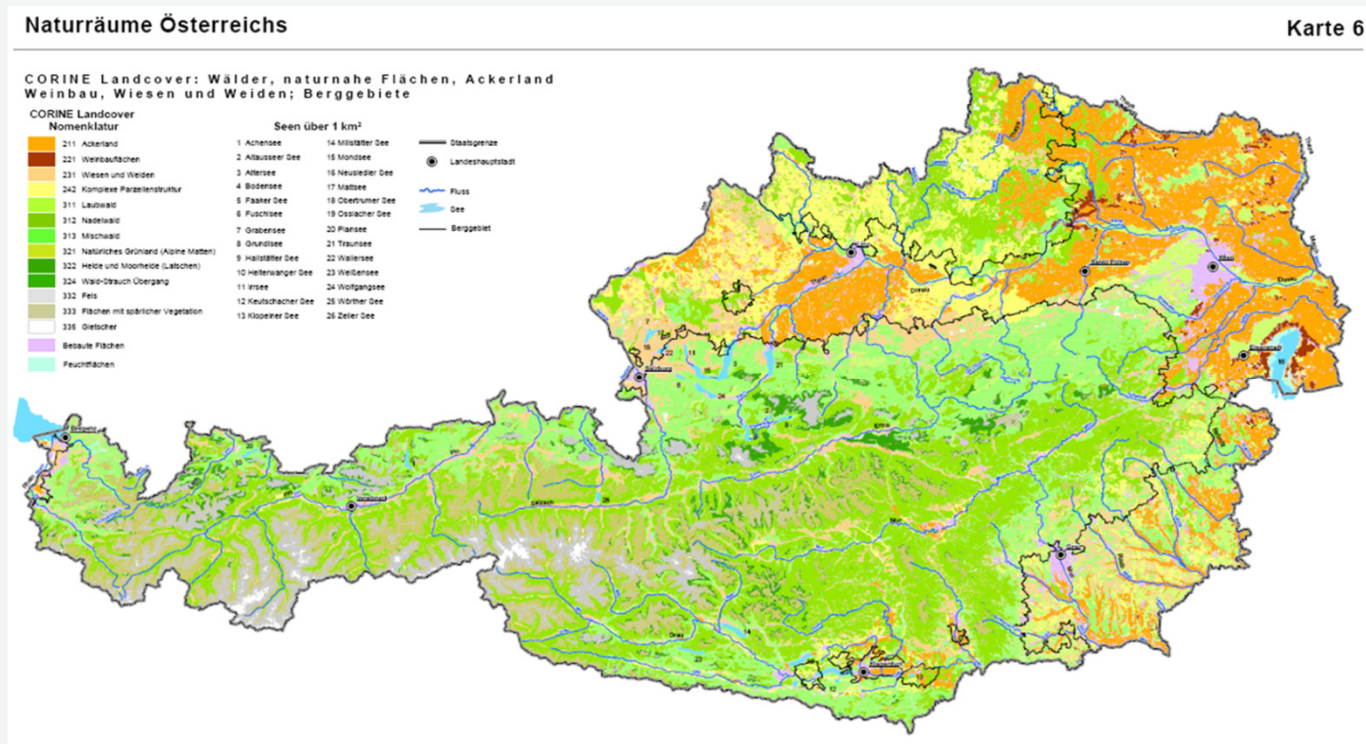
- http://www.bundesabfallwirtschaftsplan.at/dms/bawp/BAWP_Band_1_EN.pdf
- http://www.bundesabfallwirtschaftsplan.at/dms/bawp/BAWP_Band_2_EN.pdf

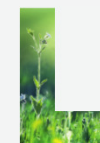


Mittwoch, 03. Dezember
2014

WATER MANAGEMENT

2/3 of Austria is mountainous (areas within dark lines)





WATER MANAGEMENT

With an average annual precipitation of around 1,100 mm Austria is one of Europe's most water-wealthy countries.

Connection to public waste water disposal: ca. 95% of population

Removal in waste water treatment parameters:

- BOD : > 98%
- COD : > 92%
- Nitrogen : > 80%
- Phosphorus : > 90%

=> sustainable water management on highest level



WATER MANAGEMENT – EFFECTS

Austria's water supply companies (community facilities, district water boards, cooperatives) supply the population with high-quality drinking water that complies with strict legal requirements.

Austrian companies have developed leading edge hydropower technologies, are amongst global market leaders for turbine technologies and suppliers for

- Run-over-the-river power plants
- Pump storage power plants
- Drinking water power plants

Over 1.600 wastewater treatment plants (>50 PE) in Austria.

Further information:

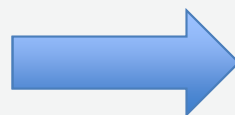
→ <http://www.bmlfuw.gv.at/en.html>

→ <http://www.ecolinx.at>



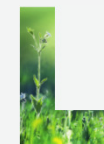


FLOOD RISK MANAGEMENT



Two major flood events 2002 and 2013.
The higher discharges 2013 – but less damage than 2002.
Recent efforts of flood risk management successful.

THANK YOU FOR YOUR ATTENTION!



MINISTERIUM
FÜR EIN
LEBENSWERTES
ÖSTERREICH

Mittwoch, 03. Dezember
2014



Doerthe.Kunellis@BMLFUW.GV.AT

→ <http://www.bmlfuw.gv.at/en.html>
→ <http://www.ecolinx.at>