

Closing the loop of materials in the
construction and demolition waste sector.
Recycling yards and permits in Austria

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Dipl.-Ing. Martin CAR

**Österreichischer Baustoff-Recycling Verband
Austrian Construction Materials Recycling Association**



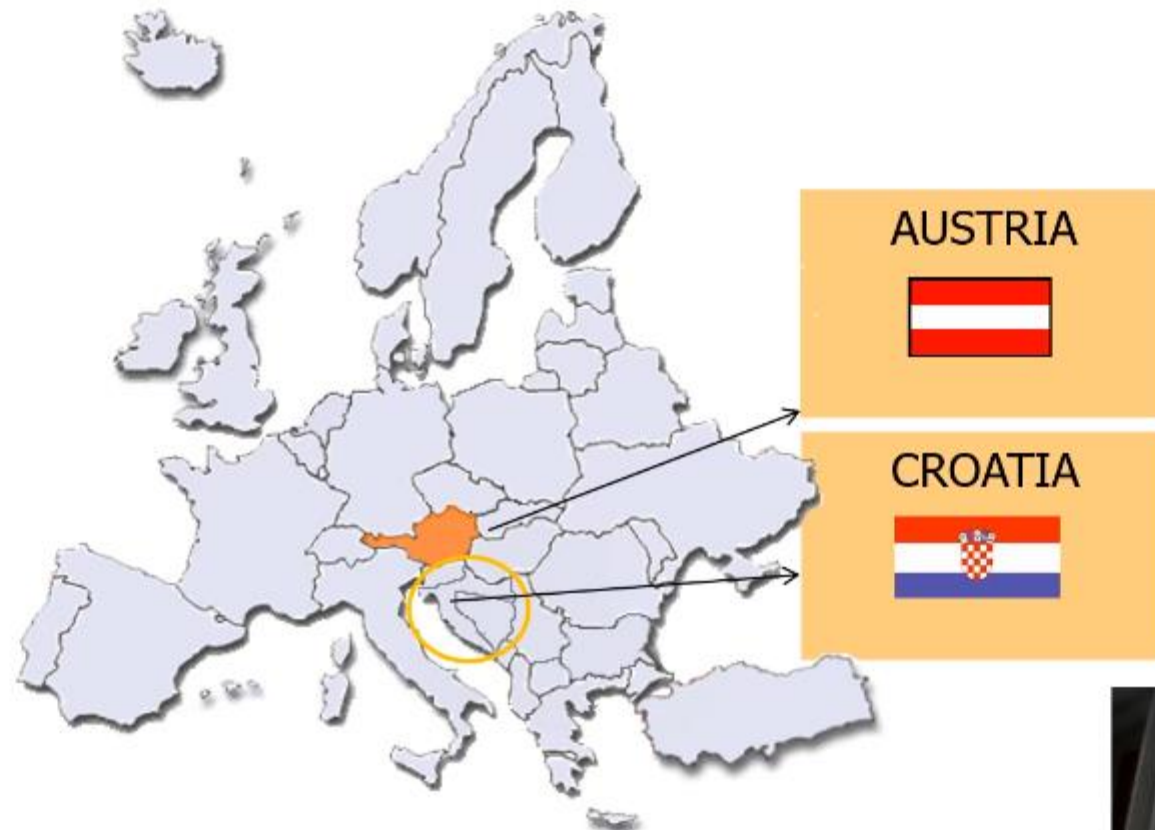
CIRCULAR ECONOMY
APPROACHES IN
SOLID WASTE
MANAGEMENT

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Austria in Facts & Figures



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Austria in general

	Austria	Croatia
Area total:	83.883 km ²	56.590 km ²
Population:	8.932.664 (2021)	4.034.529
Density:	106/km ² (2021)	72/km ²
Gross Domestic Product:	446 billion USD (2021)	68 billion USD


Building and civil engineering related figures:

Companies:	9.005 (2021)
Employees:	122.420 (2021)
Production Value:	€ 26,3 billion € (2021) = 6,2 % of GDP



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Development of C&D - Wastemanagement

- 1989: First law for waste management
- 1990: Voluntary agreement for the adduction of recycling materials
- 1990: Foundation of “Austrian Association for the Recycling of Building Materials”
- 1991: Foundation of “Austrian Quality Assurance Association for Recycled Building Materials”
- 1991: Publication of the first “Guideline For Recycled Building Materials”
- 1994: “Internet Information Platform RBB” goes online
- 2004: Guideline conform to 
- 2009: New combined Guideline
- 2014: Austrian Standard B 3151 “Deconstruction”
- 2016: Recycled Construction Material Regulation – End of Was



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The aim of BRV

- BRV represents the recycling companies in the construction sector
- Creation of guidelines, leaflets and work aids as an implementation tool
- Conducting of conferences, training courses and seminars

DOKUMENTATION nach RECYCLING-BAUSTOFFVERORDNUNG

Die Verwendungsart des Formulars ist... verbindlich empfohlen

Die jeweilige Dokumentation: Auftraggeber / Bauherr

... Abfälle stammen aus...

- genehmigt, angefragt oder behördlich beauftragt
 - ... vor dem 1.1.2016 → Formular
 - ... nach dem 1.1.2016
 - Linienbauwerke oder Verkehrsflächen → Formular
 - Hochbau, Brücken usw.
 - weniger als 750 Tonnen → Formular
 - mehr als 750 Tonnen → Online
 - weniger als 3.500 m³ Brutto-Rauminhalt → Online
 - mehr als 3.500 m³ Brutto-Rauminhalt → Online
- ab 3.500 m³ Brutto-Rauminhalt sind die besonderen Trennpflichten lt. Recycling-Baustoffverordnung zu beachten → Formular
- Aktionen (z.B. Zerbebruch) → Formular, Ausnahme von Rücklaufdokumentation

BRV-Veranstaltungen 2019

Juni

- 04.06. Die richtige Zwischenlagerung für Bodenschutt und Baurestmassen (Wien)
- 06.06. Was tun mit Aushub? (Wien)
- 06.06. Altlastenbeitrag für die Bau- und Recyclingwirtschaft (Wien)

September

- 09.09. Erkennen von Schadstoffen bei Abbrucharbeiten und Eingangskontrolle (Wien)
- 11.09. Die richtige Zwischenlagerung für Bodenschutt und Baurestmassen (Linz)
- 16.09. Recyclinggerechte Ausschreibung und Vergabe (Wien)
- 18.09. Recycling-Baustoffe in der Praxis (Wien)
- 23.09. Eingangskontrolle Baustoff-Recycling: Annahme - Produktion - Vertrieb (Wien)
- 30.09. bis 02.10. Ausbildungskurs Abbrucharbeiten - rückbaukundige Person (Wien)

Oktober

- 03.10. Was tun mit Aushub? (Wien)
- 03.10. Altlastenbeitrag für die Bau- und Recyclingwirtschaft (Wien)
- 24.10. Rechtssicherer Umgang mit Aushubmaterialien und Baurestmassen (Wien)
- 28.10. Abfallbilanzen und EDH Stammdatenverwaltung für Recyclingbetriebe (Linz)

November

- 18. bis 19.11. Ausbildungskurs Recycling-Fachperson (Wien)
- 21.11. Die richtige Zwischenlagerung für Bodenschutt und Baurestmassen (Leoben)
- 26.11. Eingangskontrolle Baustoff-Recycling: Annahme - Produktion - Vertrieb (Linz)
- 28.11. Recyclinggerechte Ausschreibung und Vergabe (Linz)

Dezember

- 03.12. Erkennen von Schadstoffen bei Abbrucharbeiten und Eingangskontrolle (Leoben)
- 10.12. Abfallbilanzen und EDH Stammdatenverwaltung für Recyclingbetriebe (Salzburg)
- 11.12. Rechtssicherer Umgang mit Aushubmaterialien und Baurestmassen (Salzburg)

Nähere Details unter www.brv.at

Wir kommen zu Ihnen!



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European Quality Association for Recycling e.V. (EQAR)

The European Quality Association for Recycling e.V. (EQAR) is the European roof organization of national quality protection organizations and producers of quality-controlled recycled building materials from the EU member states.



In accordance with the Articles of the Association adopted by the founder members in the centre of the activities of the Association there are

- promotion of the international cooperation and
- exchange of experience between the national quality protection organizations and their members and
- know-how transfer and
- support in spreading the idea of quality protection and quality assurance of recycled building materials on European level.

To reach its aims EQAR in complete consensus with the Articles of the Association confesses to cooperate with further construction and building material recycling relevant international organizations.

It is open to national and international quality associations and enterprises producing quality products and their sponsoring members to become members of Association.



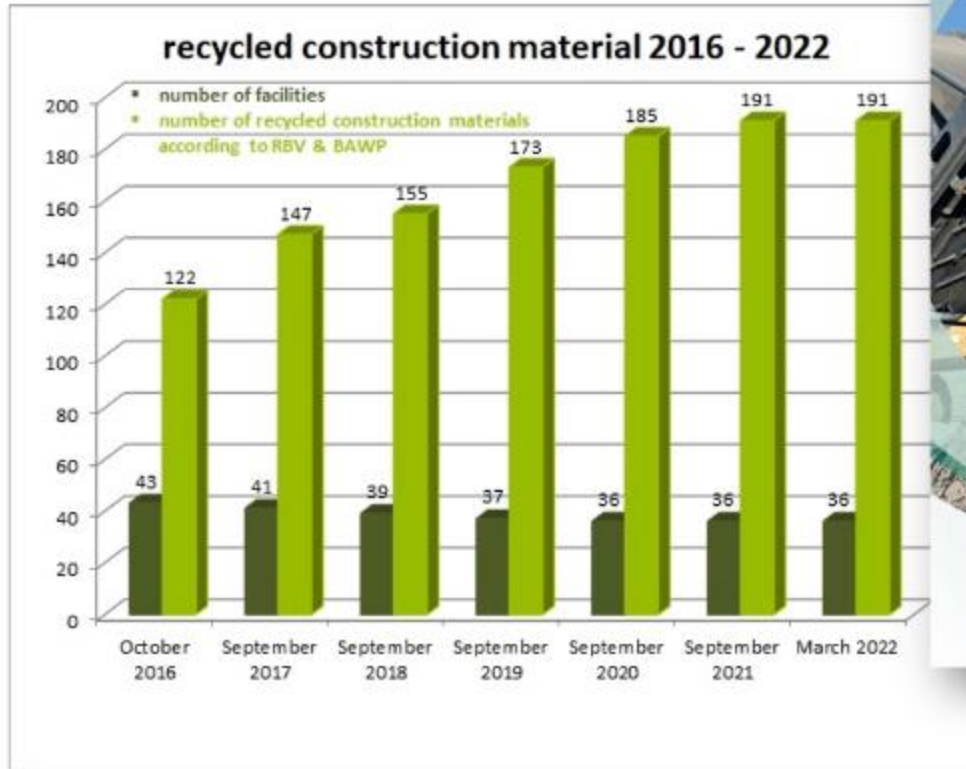
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Quality seal



Land	Region	Facility Name	Year	RBV	BAWP
Burgenland	Burgenland	RECYCLING-ANLAGE	2016		
		RECYCLING-ANLAGE	2017		
		RECYCLING-ANLAGE	2018		
		RECYCLING-ANLAGE	2019		
		RECYCLING-ANLAGE	2020		
		RECYCLING-ANLAGE	2021		
		RECYCLING-ANLAGE	2022		
		RECYCLING-ANLAGE	2023		
		RECYCLING-ANLAGE	2024		
		RECYCLING-ANLAGE	2025		
Carinthia	Carinthia	RECYCLING-ANLAGE	2016		
		RECYCLING-ANLAGE	2017		
		RECYCLING-ANLAGE	2018		
		RECYCLING-ANLAGE	2019		
		RECYCLING-ANLAGE	2020		
		RECYCLING-ANLAGE	2021		
		RECYCLING-ANLAGE	2022		
		RECYCLING-ANLAGE	2023		
		RECYCLING-ANLAGE	2024		
		RECYCLING-ANLAGE	2025		
Lower Austria	Lower Austria	RECYCLING-ANLAGE	2016		
		RECYCLING-ANLAGE	2017		
		RECYCLING-ANLAGE	2018		
		RECYCLING-ANLAGE	2019		
		RECYCLING-ANLAGE	2020		
		RECYCLING-ANLAGE	2021		
		RECYCLING-ANLAGE	2022		
		RECYCLING-ANLAGE	2023		
		RECYCLING-ANLAGE	2024		
		RECYCLING-ANLAGE	2025		
Upper Austria	Upper Austria	RECYCLING-ANLAGE	2016		
		RECYCLING-ANLAGE	2017		
		RECYCLING-ANLAGE	2018		
		RECYCLING-ANLAGE	2019		
		RECYCLING-ANLAGE	2020		
		RECYCLING-ANLAGE	2021		
		RECYCLING-ANLAGE	2022		
		RECYCLING-ANLAGE	2023		
		RECYCLING-ANLAGE	2024		
		RECYCLING-ANLAGE	2025		
Salzburg	Salzburg	RECYCLING-ANLAGE	2016		
		RECYCLING-ANLAGE	2017		
		RECYCLING-ANLAGE	2018		
		RECYCLING-ANLAGE	2019		
		RECYCLING-ANLAGE	2020		
		RECYCLING-ANLAGE	2021		
		RECYCLING-ANLAGE	2022		
		RECYCLING-ANLAGE	2023		
		RECYCLING-ANLAGE	2024		
		RECYCLING-ANLAGE	2025		
Styria	Styria	RECYCLING-ANLAGE	2016		
		RECYCLING-ANLAGE	2017		
		RECYCLING-ANLAGE	2018		
		RECYCLING-ANLAGE	2019		
		RECYCLING-ANLAGE	2020		
		RECYCLING-ANLAGE	2021		
		RECYCLING-ANLAGE	2022		
		RECYCLING-ANLAGE	2023		
		RECYCLING-ANLAGE	2024		
		RECYCLING-ANLAGE	2025		
Tyrol	Tyrol	RECYCLING-ANLAGE	2016		
		RECYCLING-ANLAGE	2017		
		RECYCLING-ANLAGE	2018		
		RECYCLING-ANLAGE	2019		
		RECYCLING-ANLAGE	2020		
		RECYCLING-ANLAGE	2021		
		RECYCLING-ANLAGE	2022		
		RECYCLING-ANLAGE	2023		
		RECYCLING-ANLAGE	2024		
		RECYCLING-ANLAGE	2025		
Vienna	Vienna	RECYCLING-ANLAGE	2016		
		RECYCLING-ANLAGE	2017		
		RECYCLING-ANLAGE	2018		
		RECYCLING-ANLAGE	2019		
		RECYCLING-ANLAGE	2020		
		RECYCLING-ANLAGE	2021		
		RECYCLING-ANLAGE	2022		
		RECYCLING-ANLAGE	2023		
		RECYCLING-ANLAGE	2024		
		RECYCLING-ANLAGE	2025		



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Construction & Demolition Waste in Austria

Total quantity of waste: 71.261.900 t (2019)

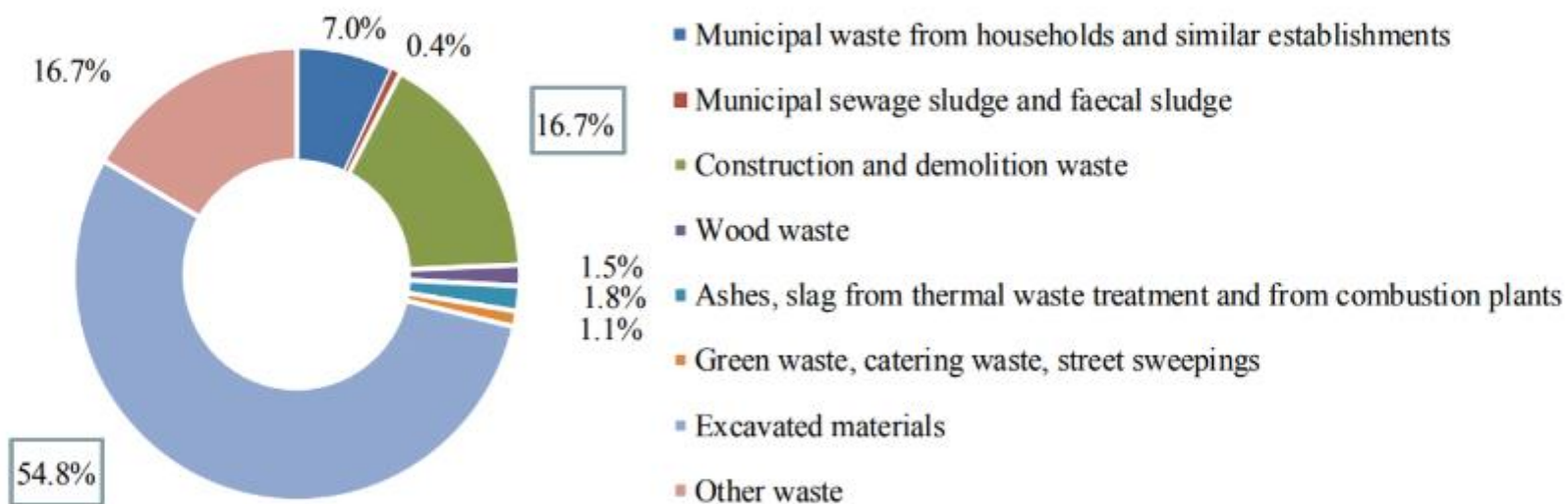


Figure 9: Composition of the overall waste generated in 2015 according to waste groups



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Construction & Demolition Waste in Austria

Table 34: Volume of construction and demolition waste

Code numbers	Waste designation	Volume [t]
Mineral construction and demolition waste		
31409	Building debris (no site waste)	2,843,000
31409 18	Building debris (no site waste, only mixtures of selected waste from construction and demolition activities)	320,000
31410	Road rubble	703,000
31427	Concrete debris	2,767,000
31427 17	Concrete debris (only selected waste from construction and demolition activities)	646,000
31467	Track ballast ¹	299,000
54912	Bitumen, asphalt	1,860,000
	Other mineral construction and demolition waste, non-hazardous	220,000
		9,658,000
Other construction and demolition waste		
91206	Site waste (no building debris)	339,000
Total		

¹ Track ballast stems from several public and private companies.



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Construction & Demolition Waste in Austria

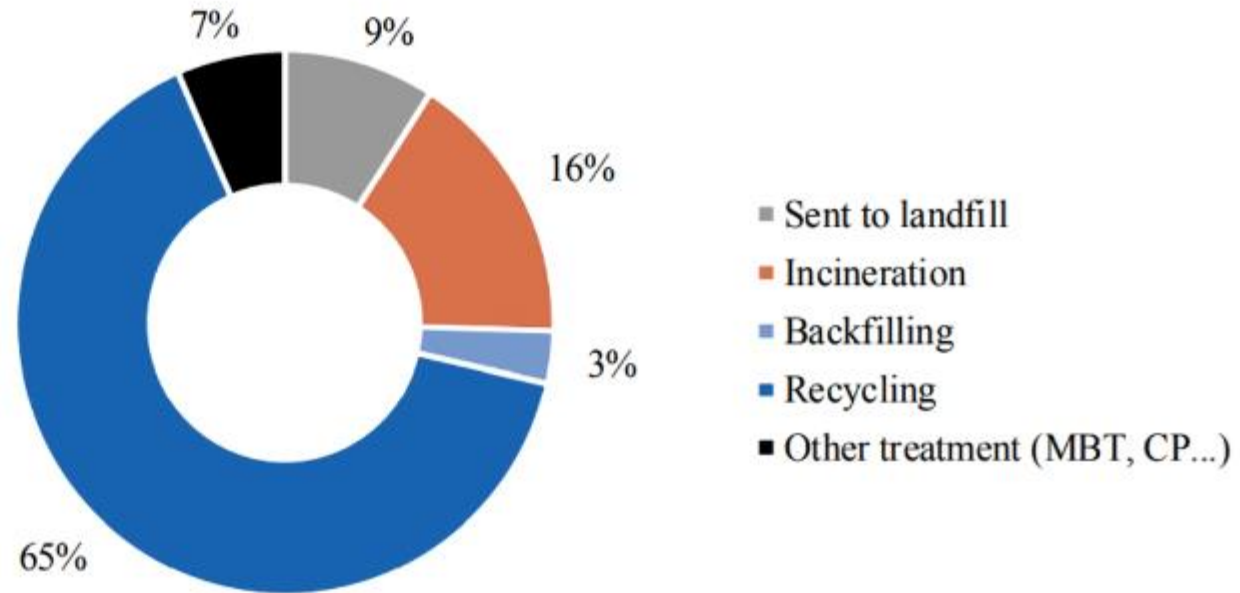


Figure 12: Recovery and disposal of waste, **excluding excavated materials**, in 2015 (basis: 26.99 million tons)



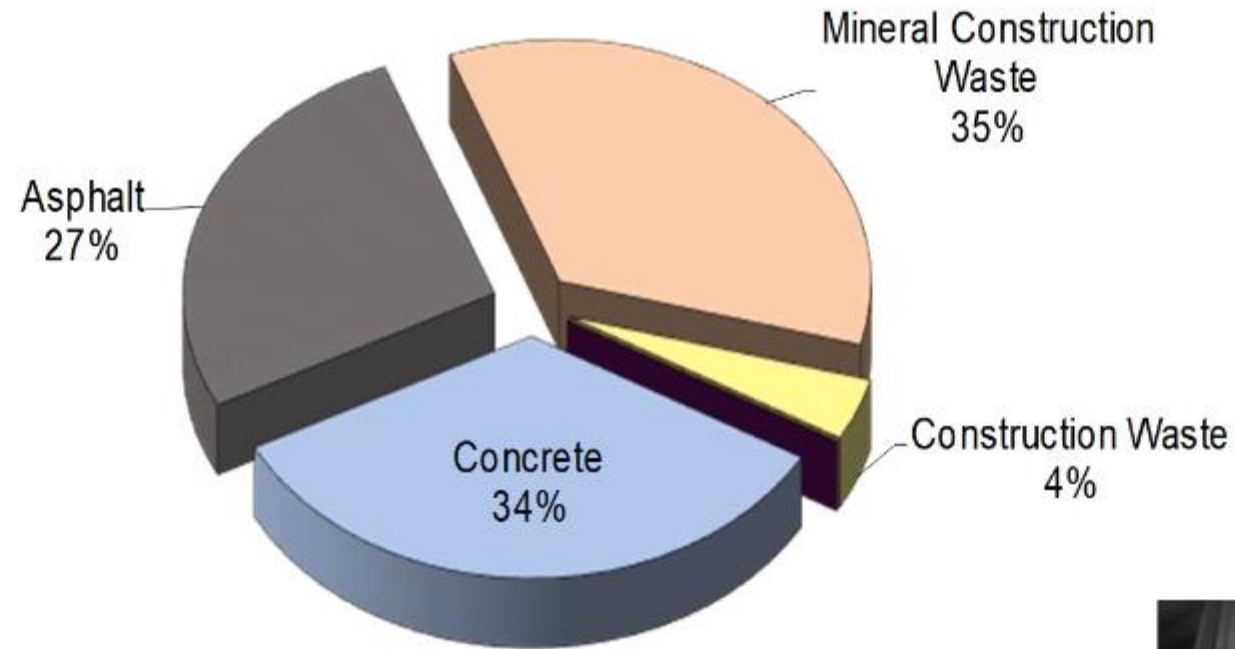
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Recycling of Building Materials in Austria



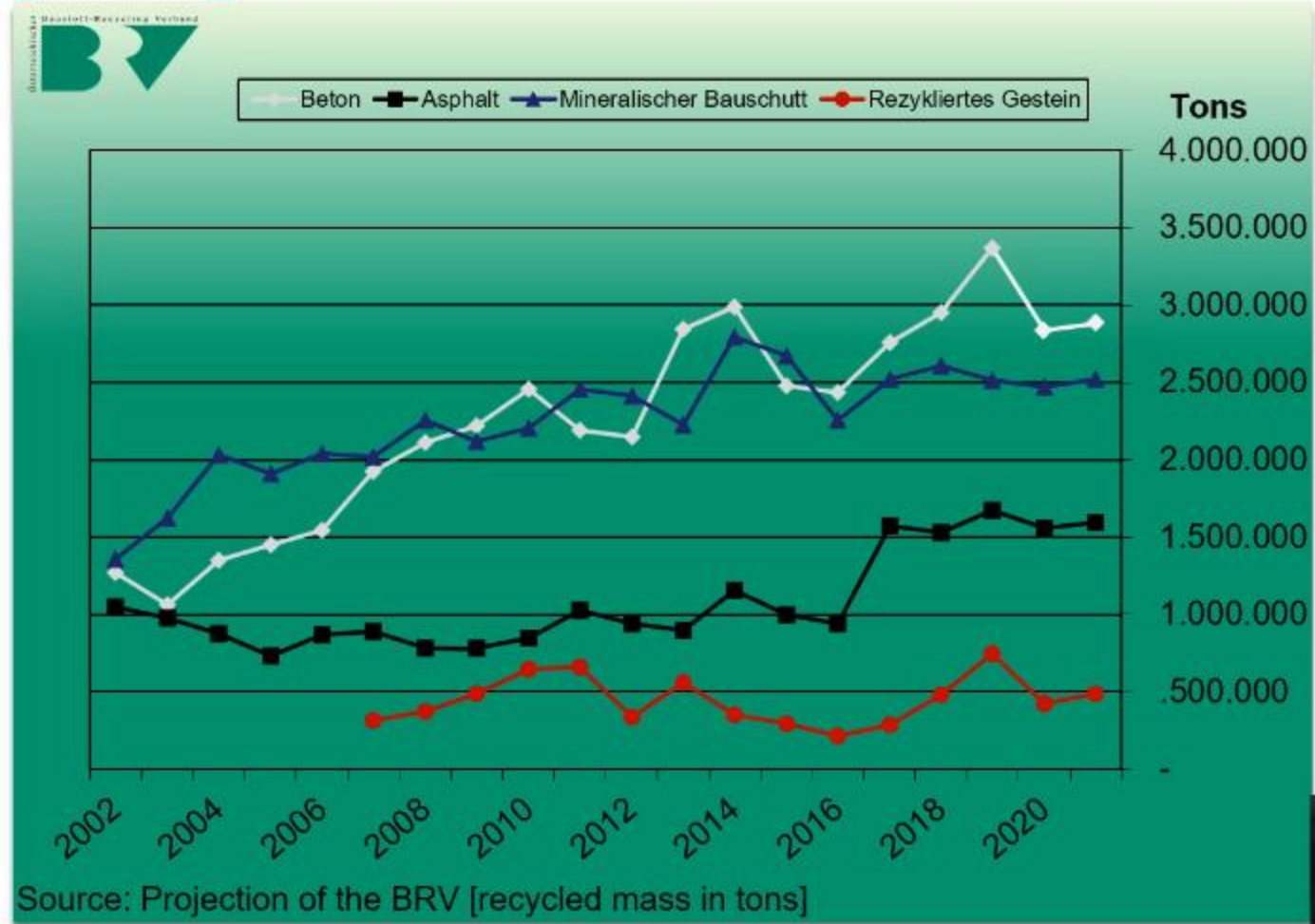
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Recycling of Construction Materials in Austria



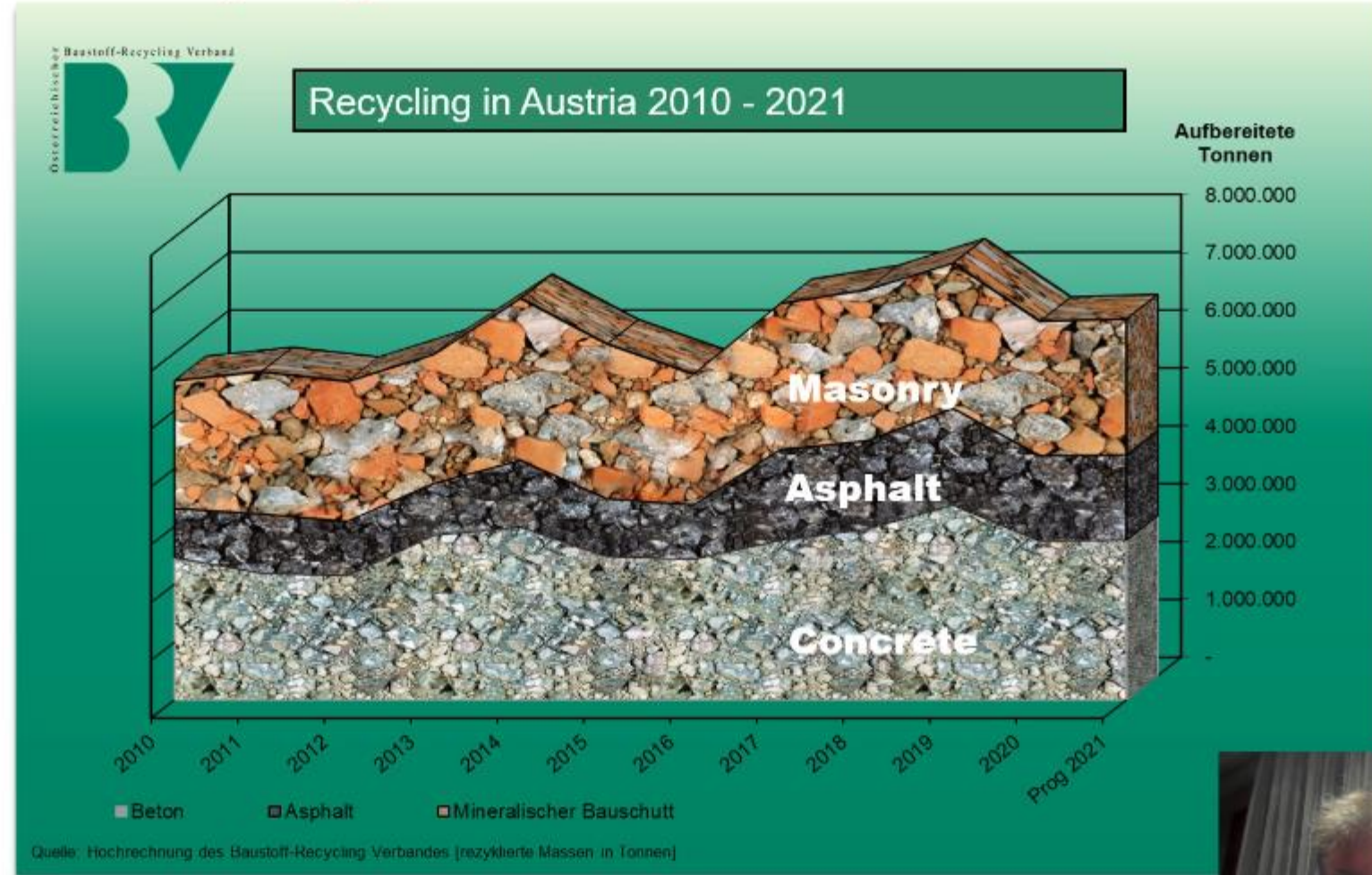
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Recycling of Construction Waste in Austria



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Quality and use

RB – Recycled crushed concrete granulate

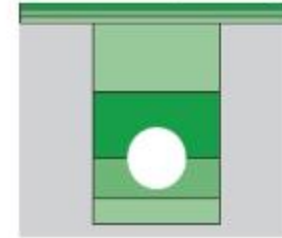


RB

Recycled crushed concrete granulate



Quality construction material for unbound upper and lower base courses, agricultural road construction, aggregate for concrete production, high-quality trench filling material, drainage layers.



RH – Recycled sand or gravel from above-ground construction

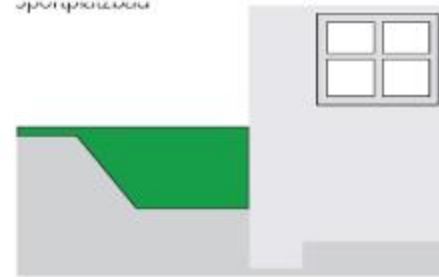


RH

Recycled sand from above ground structures; recycled gravel from above ground structures



Quality construction material for stabilised fills, stabilised trench fills, structural backfills, sports field construction



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**Mobile
treatment of
C&D-waste**



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Mobile Treatment Plants

Approval of mobile treatment plants

§ 52. (1) A mobile treatment plant referred to in an order under section 65 (3) or a substantial modification of such a mobile treatment plant shall be approved by the Authority.

(2) The application for approval of a mobile treatment plant shall be accompanied by the following documents in quadruplicate:

1. Details of the nature, purpose and extent of the proposed treatment;
2. Information on the types of waste to be treated and the treatment processes;
3. General criteria for the installation sites;
4. A description of the installation, including the necessary plans and sketches;
5. A description of the waste to be expected from the operation of the treatment facility and the arrangements for its avoidance, recovery or disposal (waste management concept pursuant to § 10 para. 3);
6. a description of the emissions to be expected and information on the avoidance or, if this is not possible, the reduction of emissions. For treatment facilities, the identification number of the treatment facility shall be indicated in the register



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**Stationary
C&D-waste
Treatment,
situated in the
heart of Vienna**



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Stationary Treatment Plants

Licensing and notification requirements for stationary treatment plants

§ 37. (1) The construction, operation and substantial modification of fixed treatment plants shall require the approval of the authority. The permit requirement shall also apply to a remediation plan pursuant to section 57(4).

(2) The following shall not be subject to the permit requirement pursuant to para. 1

1. Treatment facilities for the exclusive material recovery of non-hazardous waste, provided they are subject to the permit requirement pursuant to sections 74 et seq. of the Trade, Commerce and Industry Act 1994,
2. Treatment facilities for the pre-treatment (preparation for material recovery) of non-hazardous waste, provided that these treatment facilities are in direct local connection with a treatment facility referred to in No. 1 and are subject to the permit requirement pursuant to Sections 74 et seq. of the Trade, Commerce and Industry Act 1994,
3. Treatment plants for the exclusive material recovery of waste generated on the company's own premises, provided they are subject to the permit requirement pursuant to sections 74 ff GewO 1994



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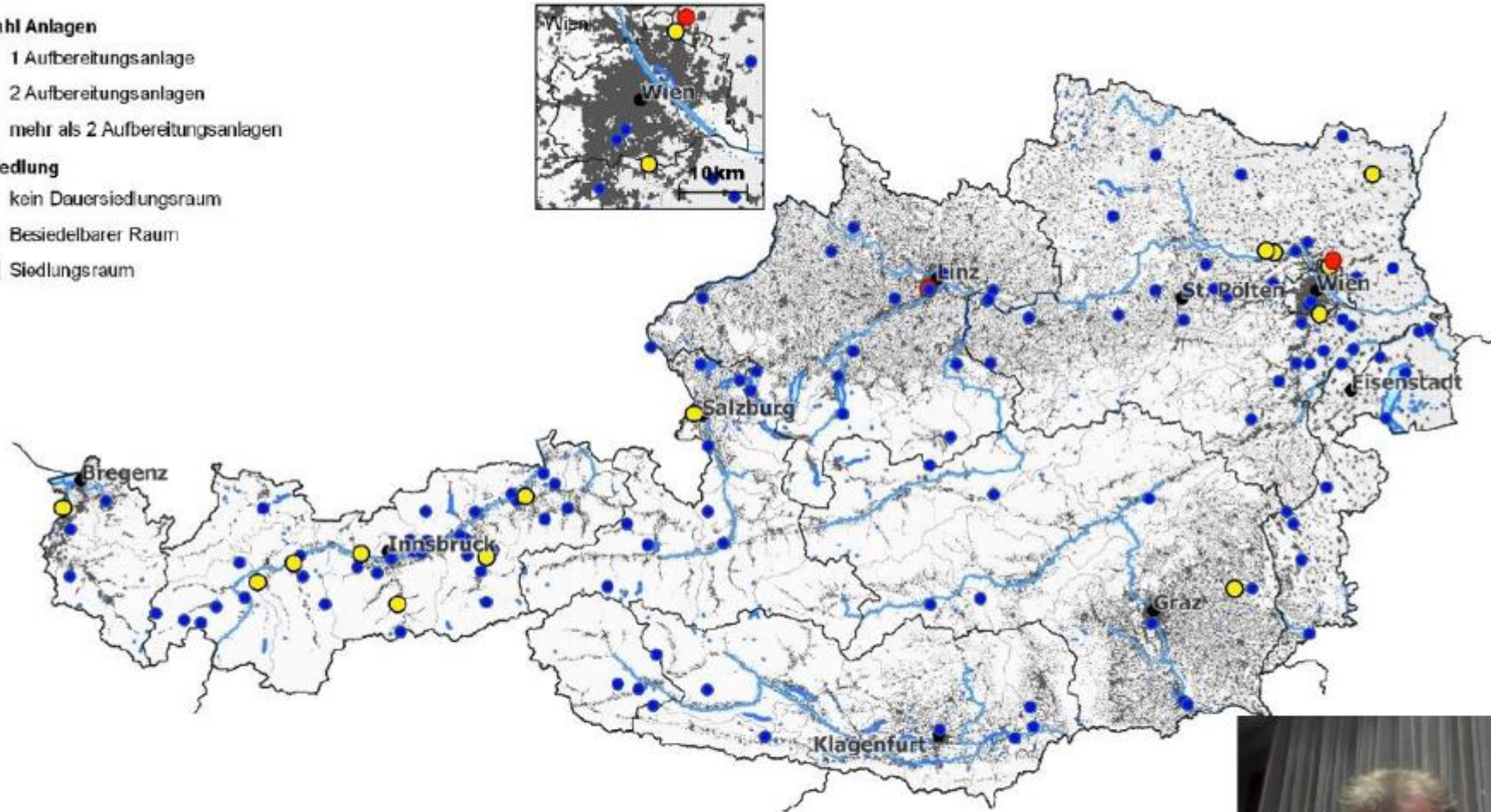
Stationary C&D - Treatment Plants

Anzahl Anlagen

- 1 Aufbereitungsanlage
- 2 Aufbereitungsanlagen
- mehr als 2 Aufbereitungsanlagen

Besiedlung

- kein Dauersiedlungsraum
- Besiedelbarer Raum
- Siedlungsraum



Quelle: Umweltbundesamt



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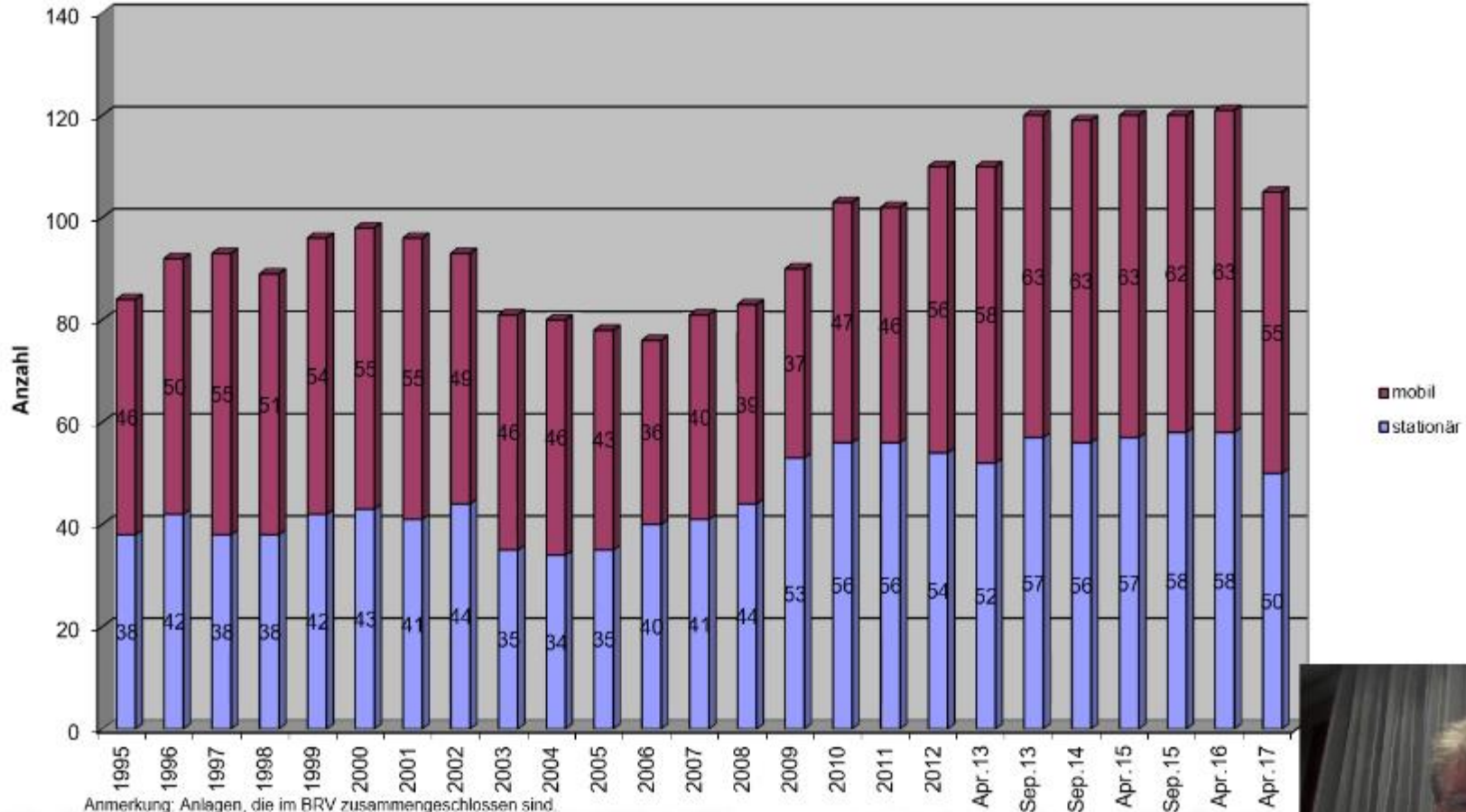


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Mobile and Stationary Recycling Plants in Austria



Baustoff-Recycling Anlagen 1995-2017



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Law for reorganization of past pollution

A steering tax helps to make recycling more economic:

The deposition of waste is subject to the contribution for past pollution:

- Landfilling/depositing
- Interim storage longer than allowed (> 3 years)
- adaptations of site
- backfilling of surface irregularities
- burning of waste
- export



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Law for reorganization of past pollution

The contribution has to be paid by:

- operator or owner of landfill
- exporter
- person responsible for action liable to contribution (employer or contractor)
- person who tolerates action liable to contribution (e.g. employer as landowner)



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Law for reorganization of past pollution

Sets charge for actual desposal of construction waste

Kind of waste site	From 1. Januar 2012 per ton
Soil excavation dump	Free for uncontaminated soil
Construction waste landfill	€ 9,20
Residual substance dump	€ 20,60
Mass refuse dump	€ 29,80

When does it occur?

- landfill → YES
- illegal use → YES
- quality building material recycling → NO !!



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Thank you for
your attention!



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