

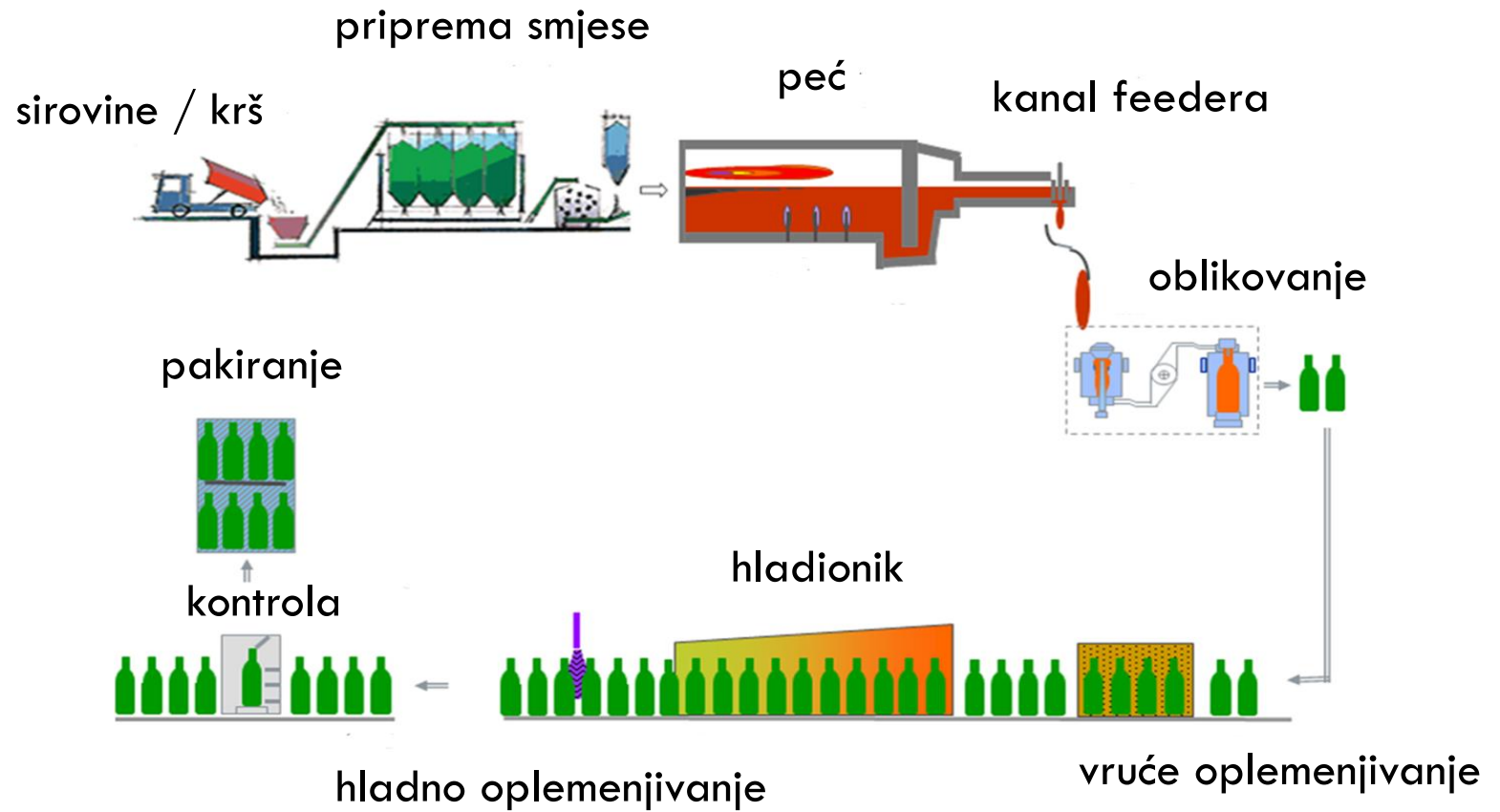
A row of glass bottles in a factory setting, with a semi-transparent text box overlaid. The bottles are arranged in a line, and the background is blurred, showing a warm, industrial atmosphere. The text box is white with a semi-transparent background and contains the text "Staklo – primjer cirkularne ekonomije" in a bold, blue font.

Staklo – primjer cirkularne ekonomije

Proizvodnja staklene ambalaže

- Jedan **najranijih** pakirnih materijala
- Prvi dokazi **4000 pr.n.e.**
- **Egipćani proizvodili** šuplje staklo 1500 pr.n.e.
- **Napoleon** ponudio nagradu 12000 franaka za unaprjeđenje konzerviranja hrane. **Nicolas Appert** dokazao da zagrijavanjem na visoke temperature i pečačenjem u staklene spremnike hrana puno duže traje.
- Michael Owens (Illinois) – 1903. stroj

Proizvodnja staklene ambalaže



Zašto odabrati staklo?



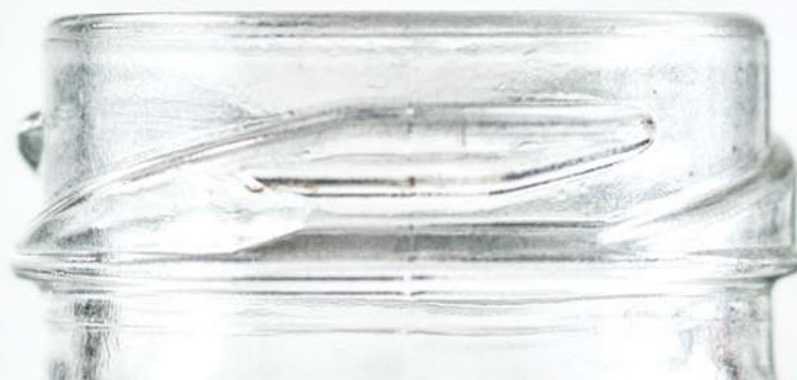
prirodno



sigurno



reciklabilno





Staklo je


prirodno

- **Kvarcni pijesak temeljni je sastojak stakla (55-60%).**
- **Soda (15-20 %) snižava točku taljena.**
- **Kalcit, dolomit i feldspat (≈ 25 %) osiguravaju trajnost, tvrdoću, stabilnost i kemijsku otpornost.**
- **Rabljeno staklo smanjuje potrošnju energije i emisije CO₂.**



Staklo je



sigurno

- Za proizvodnju staklene ambalaže **nisu potrebni drugi sastojci, kemikalije ili plastificirani slojevi.**
- Staklo je inertno: **sigurna barijera za očuvanje zdravstvene ispravnosti i kvalitete proizvoda i produljenje njihova roka trajanja**



Staklo je

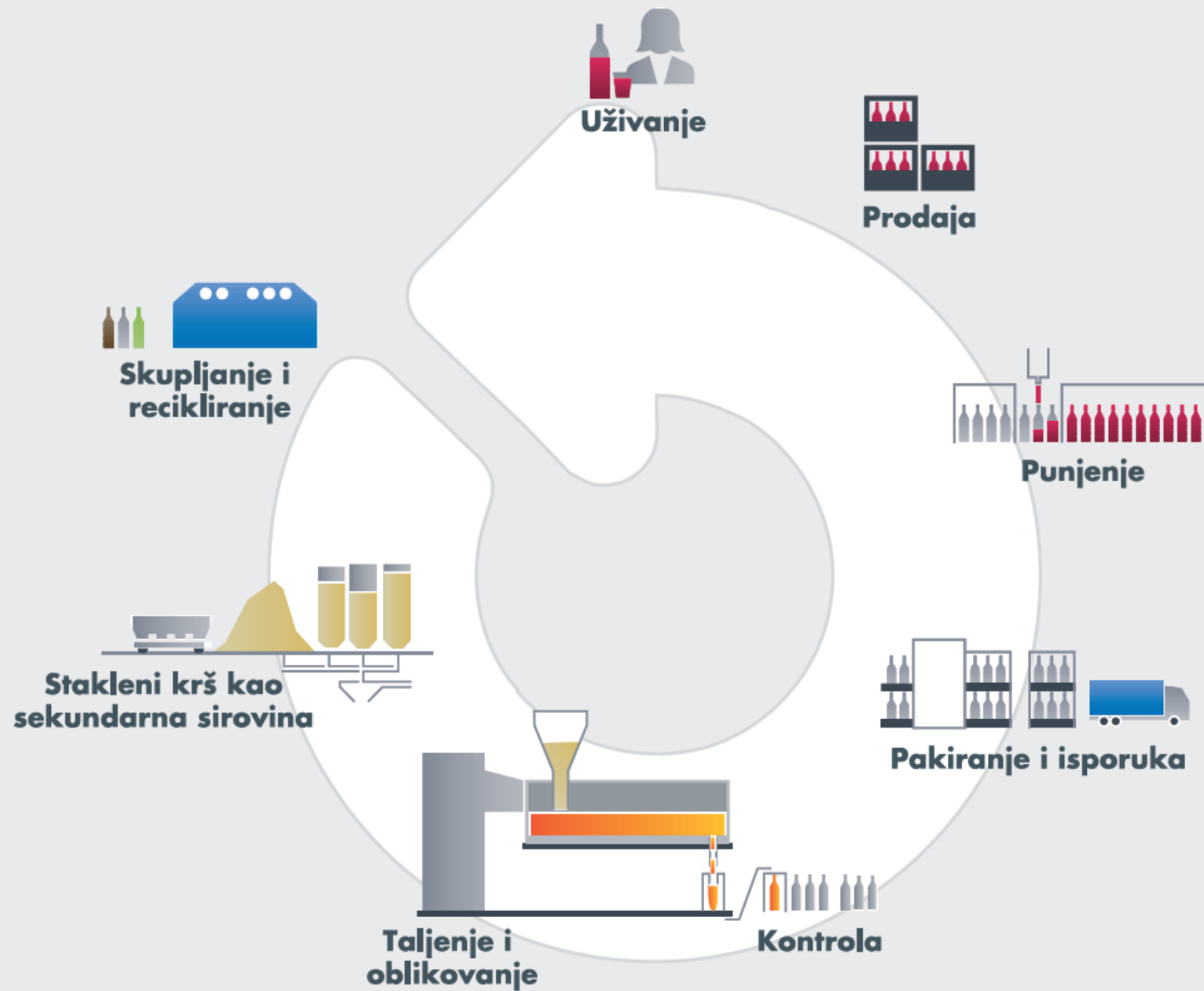


100%

**i beskonačno
reciklabilno**

- Staklo recikliranjem **ne gubi kvalitetu**.
- Što je **veći udio rabljenog stakla, to je veća ušteda energije**: 10 posto rabljenog stakla štedi 12% sirovina, 3 % energije i 5 % emisija CO₂.
- 1 t reciklata štedi 670 kg CO₂ - C2C.
- Staklene boce i staklenke mogu se **ponovno upotrijebiti i puniti**.

Kružni tok stakla



U 2022. postigli smo
udio od

57 %



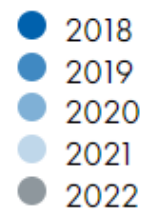
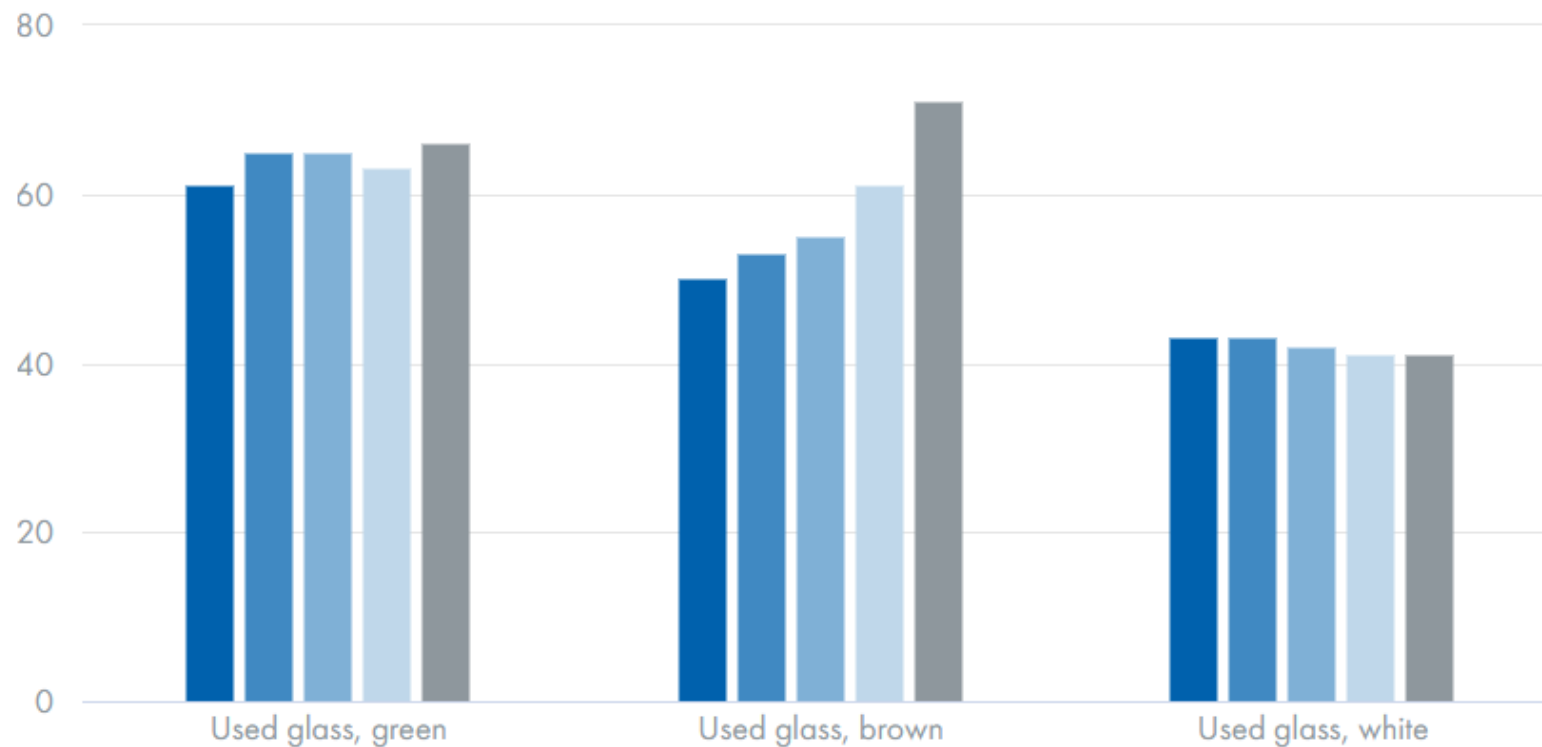
rabljenog stakla

što je u usporedbi s 2019. povećanje od 4 posto

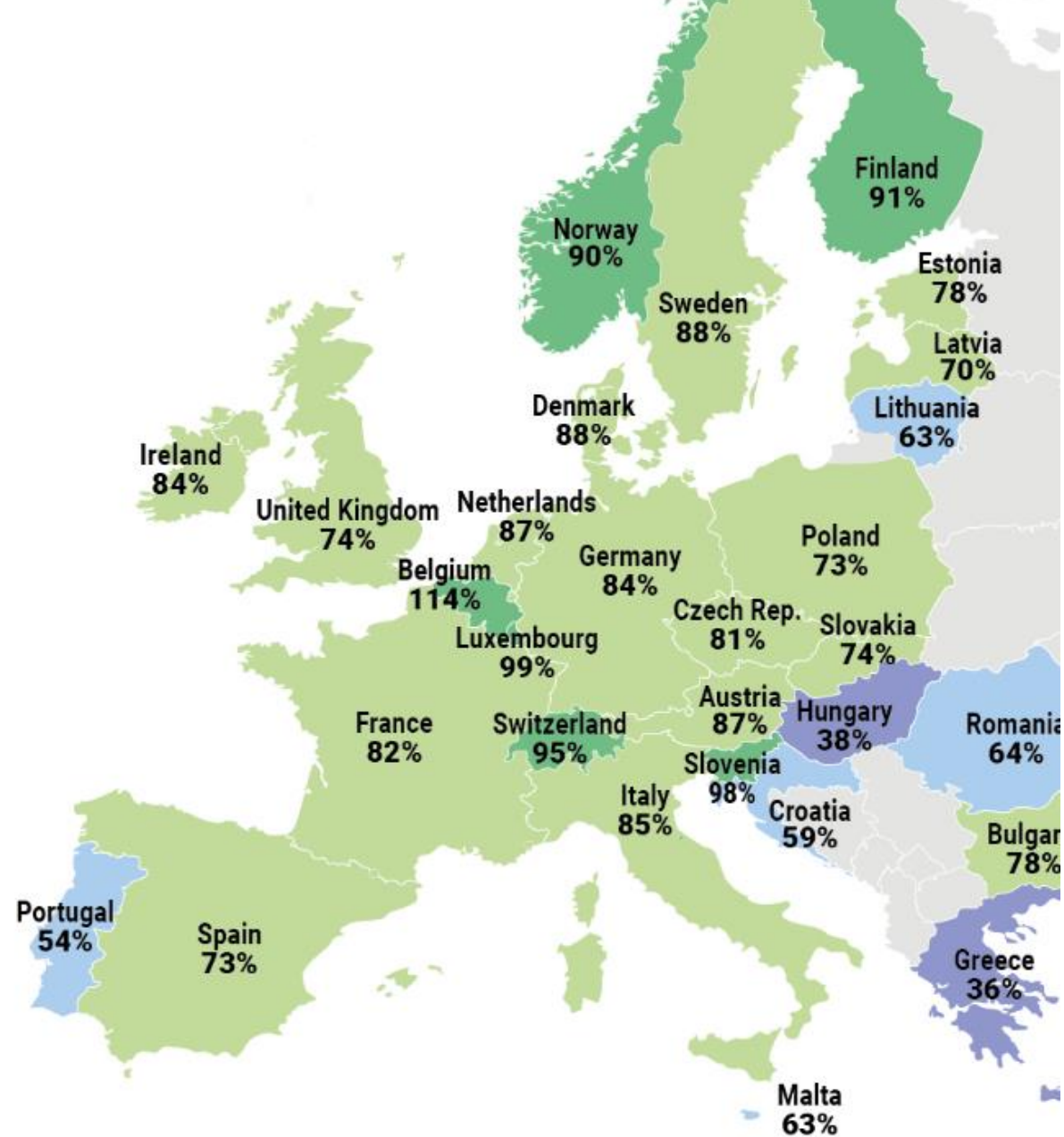
Udio reciklata

Share of used glass in the glass production

in %



Stope recikliranja stakla u Europi (FEVE/2021.)



↑ ↓	TIME	2012 ↓	2013 ↓	2014 ↓	2015 ↓	2016 ↓	2017 ↓	2018 ↓	2019 ↓	2020 ↓	2021 ↓
GEO ↓											
Luxembourg		94.6	94.8	94.5	97	97.5	97.5	98.3	98.4	99	85.2
Slovenia		87.3	85.9	99.3	98.5	100.2	98.5	104	99.5	98.4 (e)	96.4
Finland		77.6	76.8	81.4	78.4	89.8	91.8	99.3	97.4	97.3	97.7
Belgium		100	100	100	100	100	100	100	100	96.9	97.5
Sweden		88.2	89	94.7	93.6	92.8	93	92.7	93.1	93.5	82.8 (b)
Norway		87.6	86.2	87.8	86.8	89.4	83.5	89.4	97.7	90.4	:
Denmark		93.6 (e)	93	83.6	79.5	85	94.9	82.4	71.1	84.3 (b)	:
Ireland		85.5	80	86.8	87.6	86.3	84.2	82.2	83.7	84.2	83.6
Czechia		81.1	75	71.6	72.6	72.8	72.3	74.8	76.4	83.6	81.4
Austria		82.9	84.8	84.5	85.6	85.2	84.1	83.9	81.1	81.6	82.3
Liechtenstein		64.1	60.8	65.1	72.9	70.1	73.2	75.5	72.4	79.9	79.8
Germany		84.7	88.7	89	85.2	85.5	84.4	83	78 (b)	79.7	80.3
France		73.5	73.9	74.6	74.8	76.1	77.9	76.2	77.1	78.7	77.9
Italy		70.9	70.8	70.3	70.9	70.8	72.8	73.4	77.3	78.6	76.6
Estonia		70.7 (e)	71.5	72.8	62.1	63.4	61	65.4	105 (b)	77.8	80.1
Netherlands		71.3	79.8	80.1	82.7	84.4	86.2	85.7	86.6	77.1 (be)	79
European Union - 27 countries (from 2020)		73.1	73.4	75.3	74.2	75.3	75.8	75.8	75.6	76	74.9 (e)
Slovakia		69.4	72.9	67.7	66.2	62.2	68.7	68.6	69.7	74.4	:
Spain		64.2	67.4	69.7	70.4	71.8	72.2	76.8	79.8	72.5 (b)	70.7
Latvia		55.1	55.1	60.6	60.5	64	65.5	68.8	69	70.1	70.3
Northern Ireland (UK) (NUTS 2021)		:	:	:	:	:	:	:	66.6	67.8	91.3
Lithuania		72.2	54.8	60.5	74.3	71	45.6	58.2	57.3	63.4 (b)	:
Malta		21.3	49.1	31.2	20.3	29.5	28.6	41.4	43.9	62.5	60.4
Croatia		62.8	65.4	63.5	65.2	56.4	57	60.5	51.3	54.2	55.2
Portugal		59.6	55.7	56.4	55.2	58.5	49	51.3	56.1	52	54.7
Romania		66.3	49.2	54.2	41.1	64.1	63	61.1	42.9 (b)	42.7	:
Hungary		34.2	32.4	36.3	50.5	34.6	34.2	35.3	29.3	37.8	:
Cyprus		32.4 (e)	32.1	32.2	33.2	39.4	42.4	46.3 (e)	45.3 (e)	34.8 (e)	42.9 (e)
Iceland		0	0	0	0.3	0	0	0	0	0	0
Bulgaria		60.5	61.2	63.2	62.9	69.8	64	77.6	61.7	:	:
Greece		54.7	28	21.5	29.4	36.9	36	32.9 (e)	29.9 (e)	:	:
Poland		51.2	43.6	60.2	57.2	59.6	63	61.8	67.1	:	:
United Kingdom		67.8	68.3	67.2	65.7	66.9	67.6	68.5	:	:	:

vetropack 