Biofuels in the EU, production potential of Hungary

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Basics of biofuel policy in the EU

- Renewable Energy Directive (28/2009 EK)
- Fuel Quality Directive (30/2009 EK)
- 10%en renewable energy in transport
- 6% GHG savings in fuels
- Multipliers supporting the advanced fuels
- Sustainability requirements
- Road to reach targets up to the MS
- Schedules submitted in the Action Plans

Ethanol product chain in the EU 2010-2020

Products	**Balance items**	**2010**	**2020**
Cereals	**Production**	277,9	**305,1**
(million tonnes)	Net trade	+18,5	+10,8
	Used for ethanol	9,3	**30,3**
	of which: Wheat	4,3	12,6
	Maize	3,3	13,5
	Other	1,7	4,2
Sugar beet	Production	106,8	128,1
(million tonnes)	*Used for ethanol*	18,2	40,2
	Net trade (in sugar)	-2,3	**-2,0**
Etanol	Production	6,4	18,2
(billion litres)	*of which:* 2nd generat.	0,0	0,4
	Net trade	-1,6	-6,1
	Consumption	8,0	24,2

Source: Prospects for Agricultural Markets and Income in the EU 2011-2020

Biodiesel product chain in the EU 2010-2020

Products	**Balance items**	**2010**	**2020**
Oilseeds	Production	29,4	32,1
(million tonnes)	Net trade	-16,6	-17,2
Veg. Oils	**Oil production**	14,5	**16,0**
(million tonnes)	Net trade	-8,1	-10,4
	Used for biodiesel	9,1	**13,9**
Biodiesel	Production	10,3	18,5
(billion litres)	*of which:* 1st. generation	9,7	14,9
	2nd. generation	0,5	3,6
	Net trade	-2,7	-2,3
	Consumption	13,0	20,8

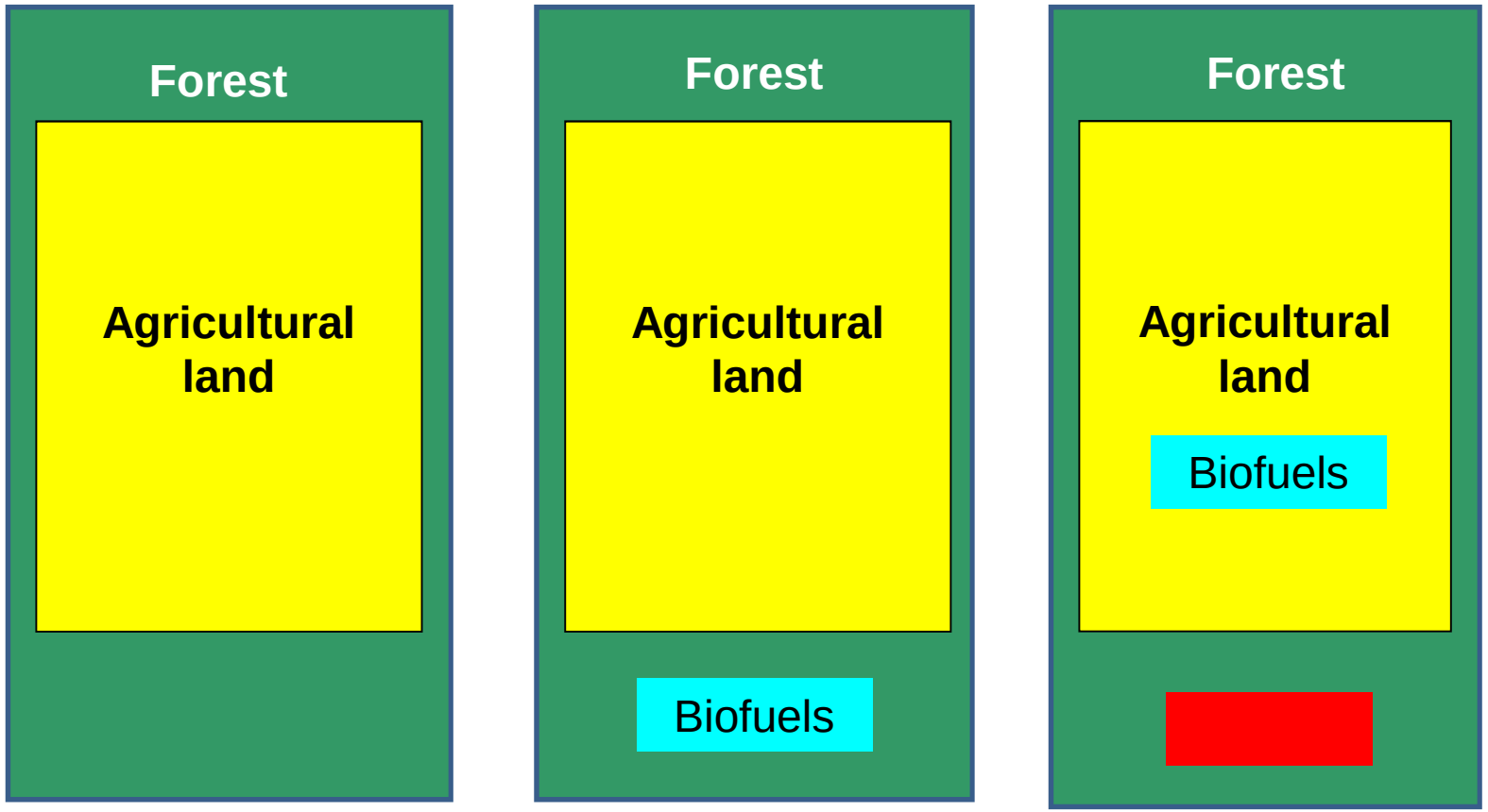
Source: Prospects for Agricultural Markets and Income in the EU 2011-2020

The ILUC proposal – COM(2012) 595

- The 10% target remains virtually
- **1st generation** biofuels counted **max 5%en**
- The **remaining 5 %** can be fulfilled by **2nd gen.** biofuels, renewable electricity **using raised multipliers**
- Proposed ILUC values:
- cereals, sugar crops **+12g/MJ**
- vegetable oils **+55g/MJ**
- Required GHG savings raised to 50% from 2018

Source: COM(2012) 595

Indirect Land Use Change caused by biofuel production, the 'ILUC' factor



Base case

Direct land use change

Indirect land use change

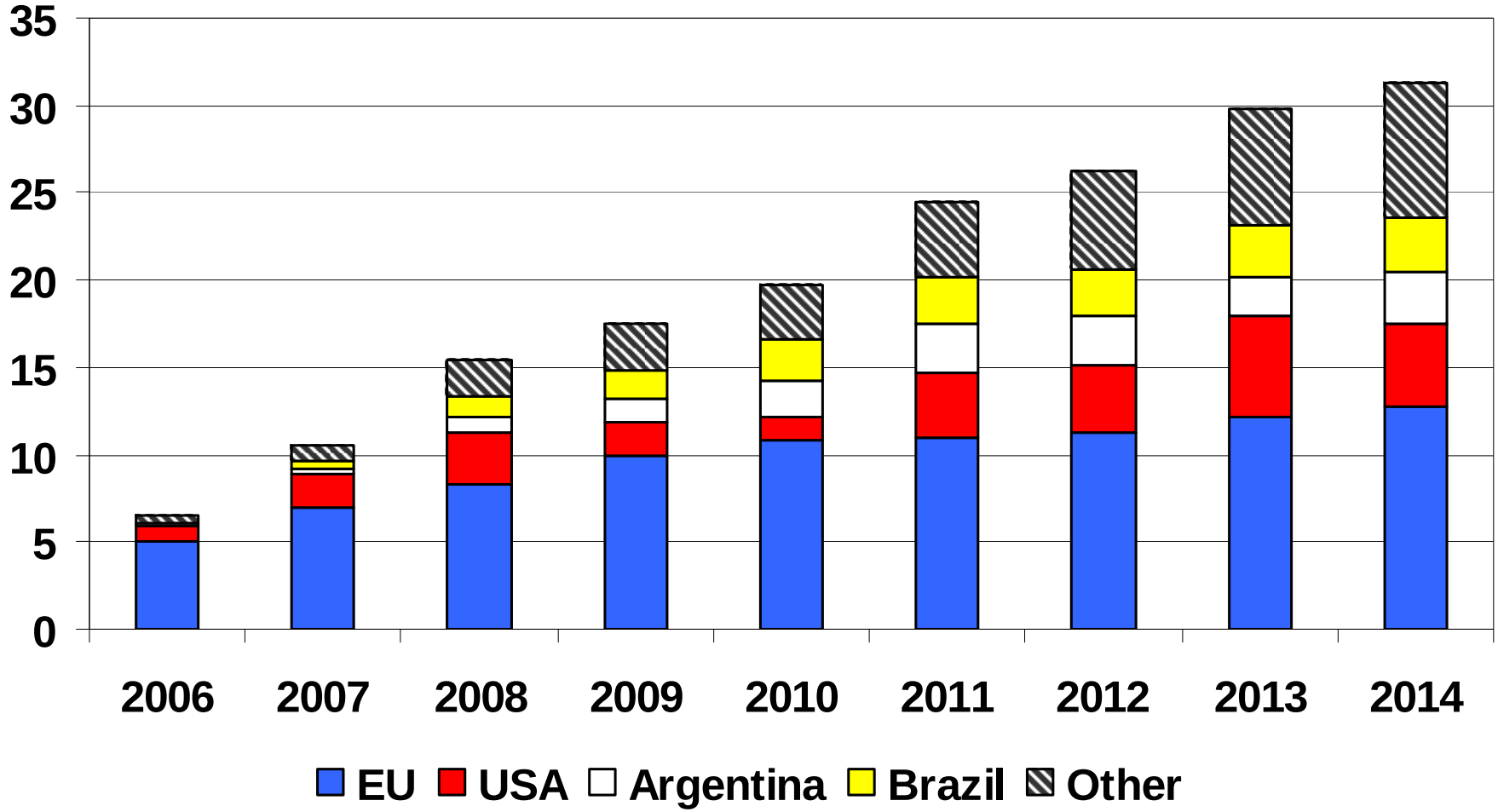
Calculated impact of EU biofuel policy on World market prices in 2020 (% compared to 2010)

Wheat	1,0	Palmoil	4,5
Corn	**0,7**	Rapeseed oil	9,2
Sugar crops	0,9	Soy oil	7,3
Soy beans	2,5	Cattle for slaughter	0,047
Sunseeds	4,8	Other animal f. sla.	0,220
Rapeseeds	**11,0**	Meat and milkprod.	0,078
Palmkernel	2,1	Sugar	1,0

Calculation of the EU Commission based on output data of the IFPRI (International Food Policy Research Institute) model also used for modelling ILUC factors

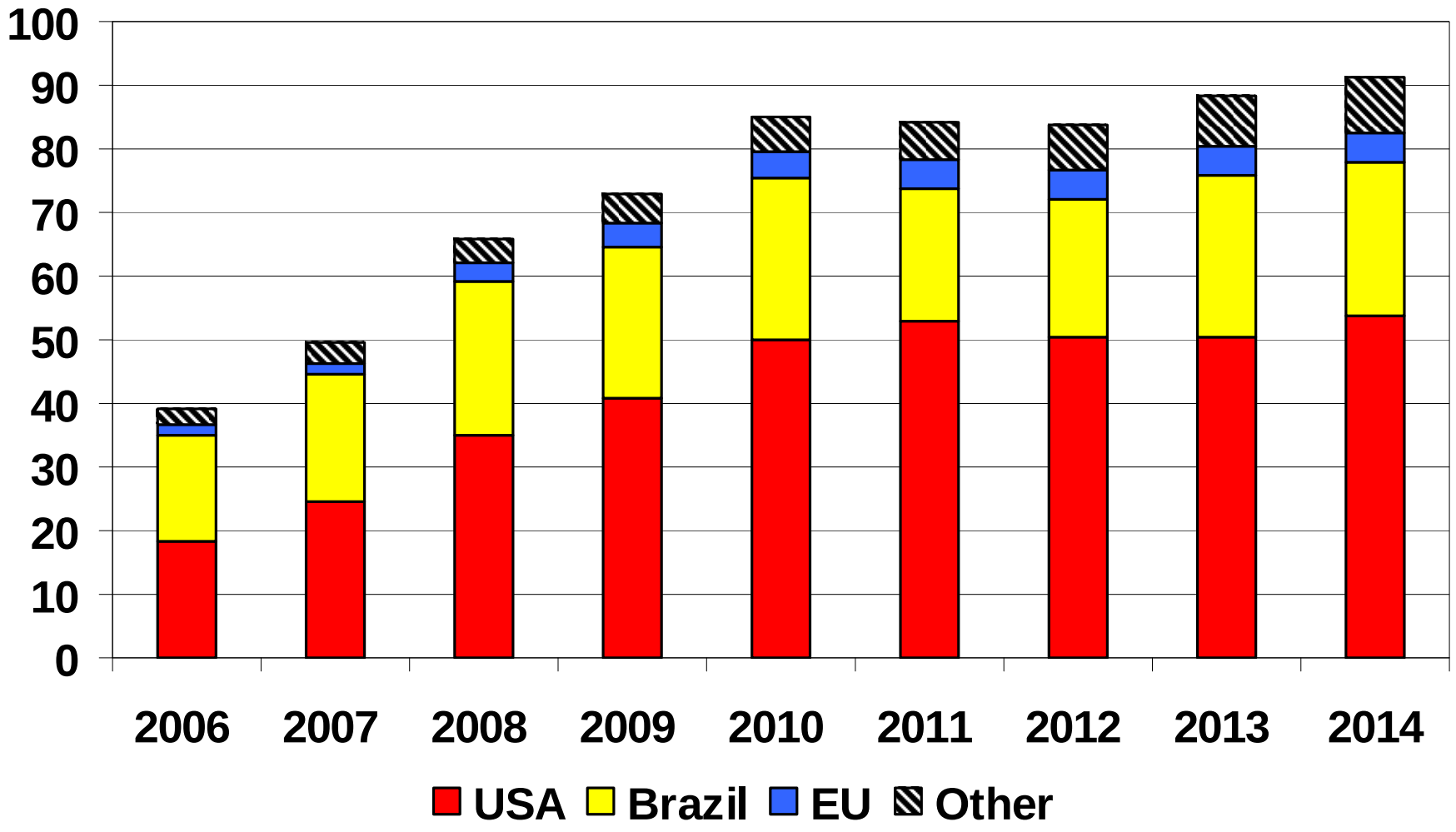
Source: European Commission – SWD(2013) 102 final

World biodiesel production 2006-2014 (billion litres)



Source: F.O. Licht

World bioethanol production 2006-2014 (billion litres)



Source: F.O. Licht

Development of the ILUC proposal

- Sept. 2012 Commission Proposal (5% cap)
- Sept. 2013 Decision of the Parliament (6% cap)
- Dec. 2013 Council (7% failed) PL+HU NO
- May 2014 Council (7% agreed)
- Next: 2nd reading at the Parliament

Influencing factors: No ILUC approval, Dropping prices, Crisis in Ukraine

Other legislations: State Aid Guidelines, Fuel Infrastructure, Energy Strategy 2030

Expected biofuel use in 2020 in Hungary

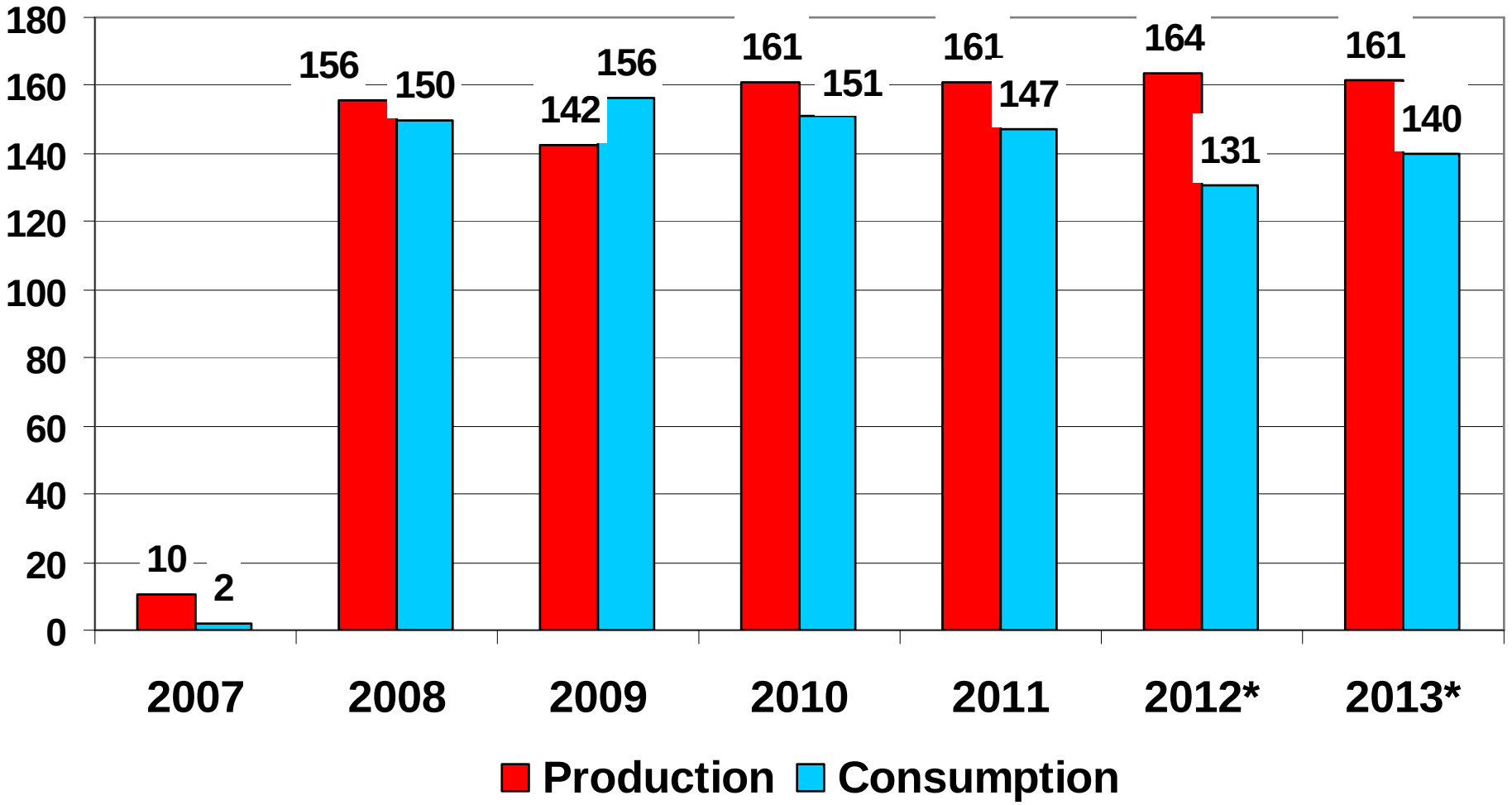
95% of the compulsory 10% to be liquid biofuels

	Bioethanol	Biodiesel
Energy share (%en)	16	6
Volumetric share (%vol)	*23*	6,5
Energy (ktoe)	300	200
Volumen (1000 tonnes)	475	225
Of which: 1st gen.	475	200
1st gen. (million litres)	600	225
Feedstock required (1000 t)	1 550 maize	500 rapeseed
Land required (1000 ha)	240 maize	250 rapeseed

From January 2014 mandatory blending of 4,9%en for all fuels

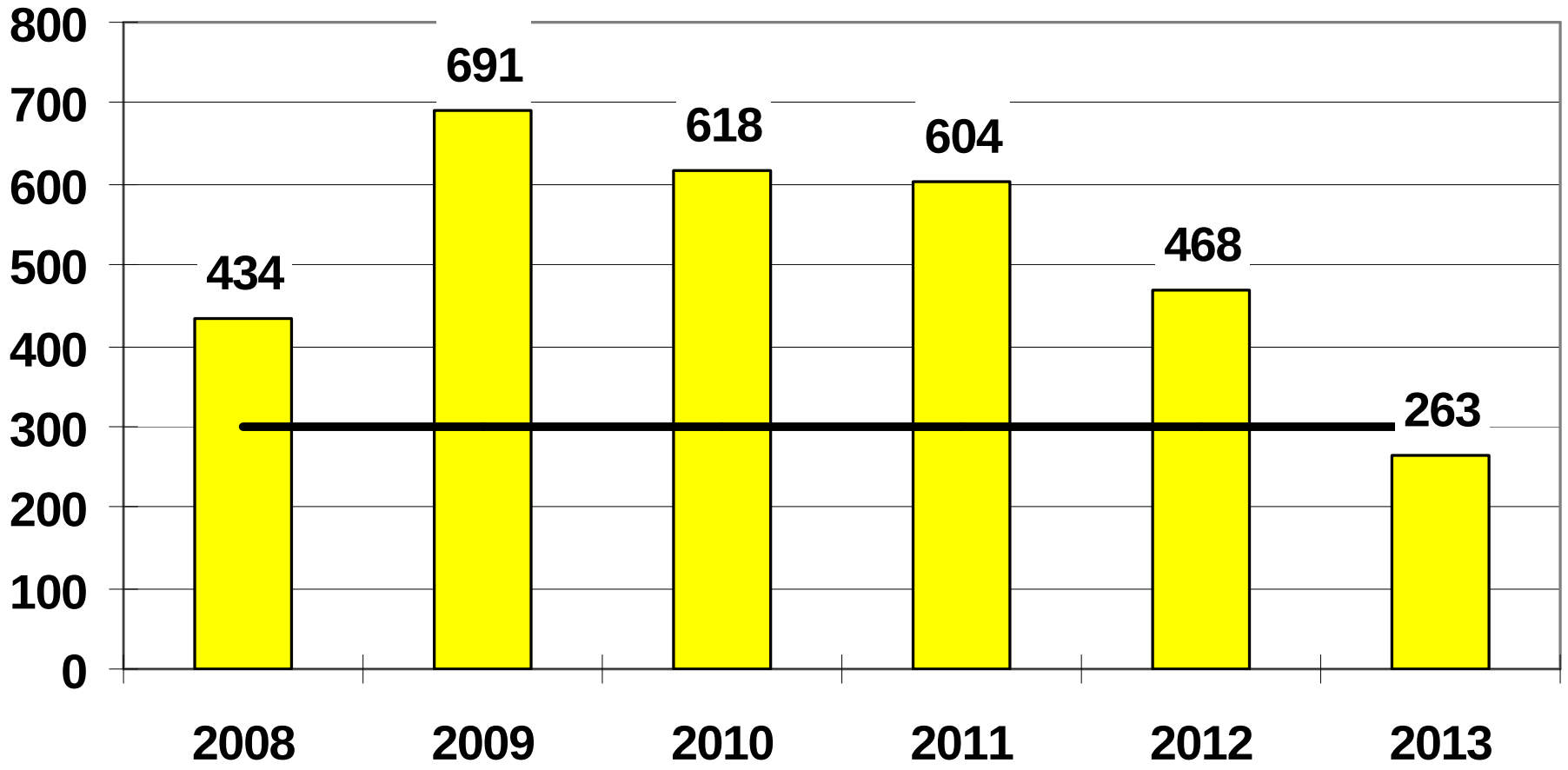
Source: Renewable Energy Action Plan of Hungary, existing legislation

Biodiesel production and consumption in Hungary 2007-2013 (million litres)



Sources: Eurostat, *AKI estimation

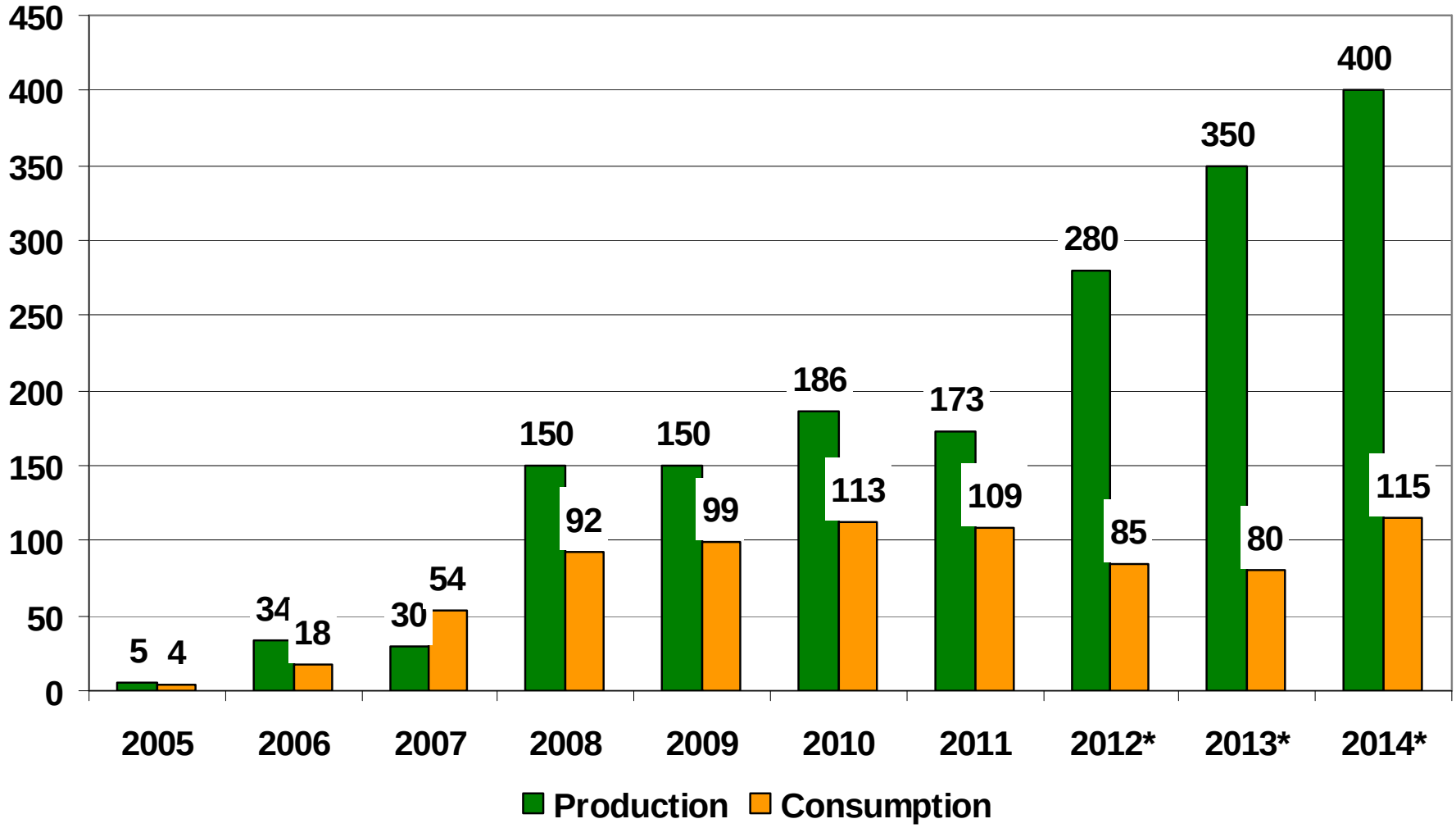
Net export of rapeseed (CN 1205) from Hungary (thousand tonnes)



Black line: AKI estimation on rapeseed use in 2013 for biodiesel in HU

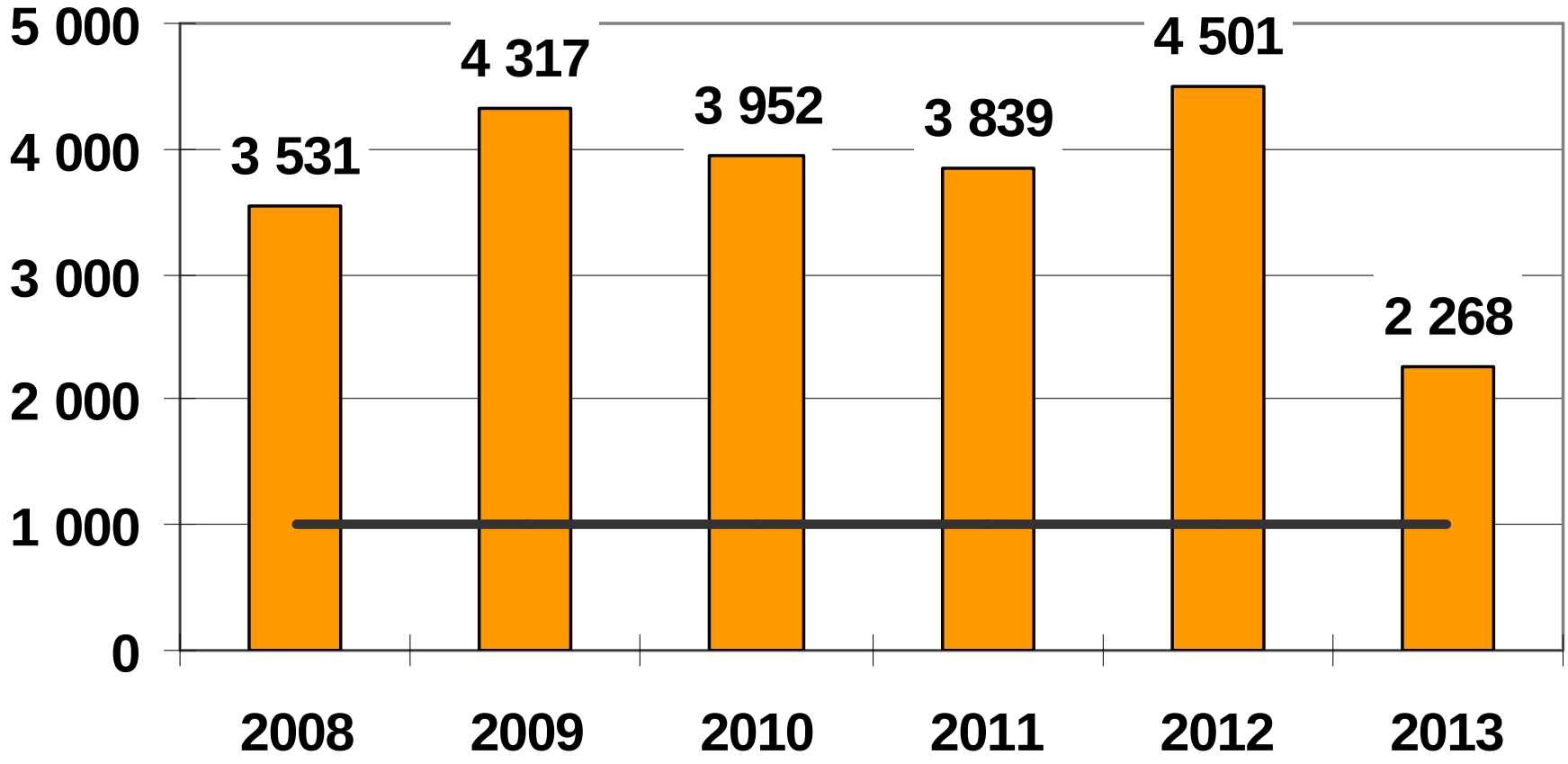
Sources: HCSO

Fuel ethanol production and consumption in Hungary 2005-2014 (million litres)



Sources: F.O. Lichts, Progress Reports, *AKI estimations

Net exports of maize (KN 1005) from Hungary (thousand tonnes)



Black line: Maize used in 2013 for bioethanol in HU

Source: HCSO

Bioethanol production capacities in Hungary

Fuel Output (mill. litres)	2011	2012	2013	2014	2015	2016(?)
Hungrana	175	175	175	175	175	175
Pannonia 1.	-	150	240	320	320	480(?)
Pannonia 2.	-	-	-	-	240(-)	480(?)
Total	175	325	415	495	635(?)	1135(?)

Maize Use (th. tonnes)	2011	2012	2013	2014	2015	2016(?)
Hungrana	435	435	435	435	435	435
Pannonia 1.	-	375	600	800	800	1200(?)
Pannonia 2.	-	-	-	-	600(-)	1200(?)
Total	435	810	1035	1235	1835	2835(?)

Source: AKI calculation based on industry releases

Conclusions, additional remarks

- Softening of the Original ILUC Proposal is supported by Hungary
- No supports for virtual savings
- Biofuel policy is increasing productivity
- Support by Biofuel policy, relieves funds for helping other sectors
- Production: No problem for Hungary
- Consumption: Well..., we are late
- Future legislation must be more stable

Dziękuję za uwagę!

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