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Problems of optimization of the resources saving in Agriculture and Industry

- 1. The introduction of the progressive technologies and efficient techniques to decrease the impact on the environment and support the fertility of land;**
- 2. The optimization of the Structure of Machine – Tractor Fleet with the aim of saving resources, labor and increasing of the agricultural machinery efficiency;**
- 3. To work out the requirements of global standardization and unification of the key types of Machinery with the aim of decrease considerably cost of industrial production and maintenance of the agricultural machines.**

Analysis of tendencies of development of the agricultural tractors and the proposals for optimization of the tractor fleet structure

- 1. Analysis of the tractor market in RUSSIA and BELARUS;**
- 2. The tendencies of development of the tractor market in Italy;**
- 3. Comparison of market of tractors in RUSSIA, BELARUS and ITALY;**
- 4. Analysis of the application of the rotary tillage machines in ITALY;**
- 5. Market of Grain and Forage Harvesters in RUSSIA;**
- 6. Tractor Fleets and Arable land Resources of the 8 Countries;**
- 7. Proposals for optimization of Tractor Fleet Structure in the UNION STATE.**

UNIVERSAL MOBILE POWER UNIT UES-290/450



INNOVATIONS IN CONSTRUCTION OF MACHINES TO UES

-application of rotary plow and rotary tillers on the base of UES gives the high efficiency, low level of resistant because they generate the support strength up to 4 kN/m;

-high quality of tillage of sward land of grasslands and pastures with rotary tillers for one pass of aggregate on the base of UES decrease the labor cost to 1,5-2 fold, fuel consumption to 30-40% and metal materials to 2,4 fold;

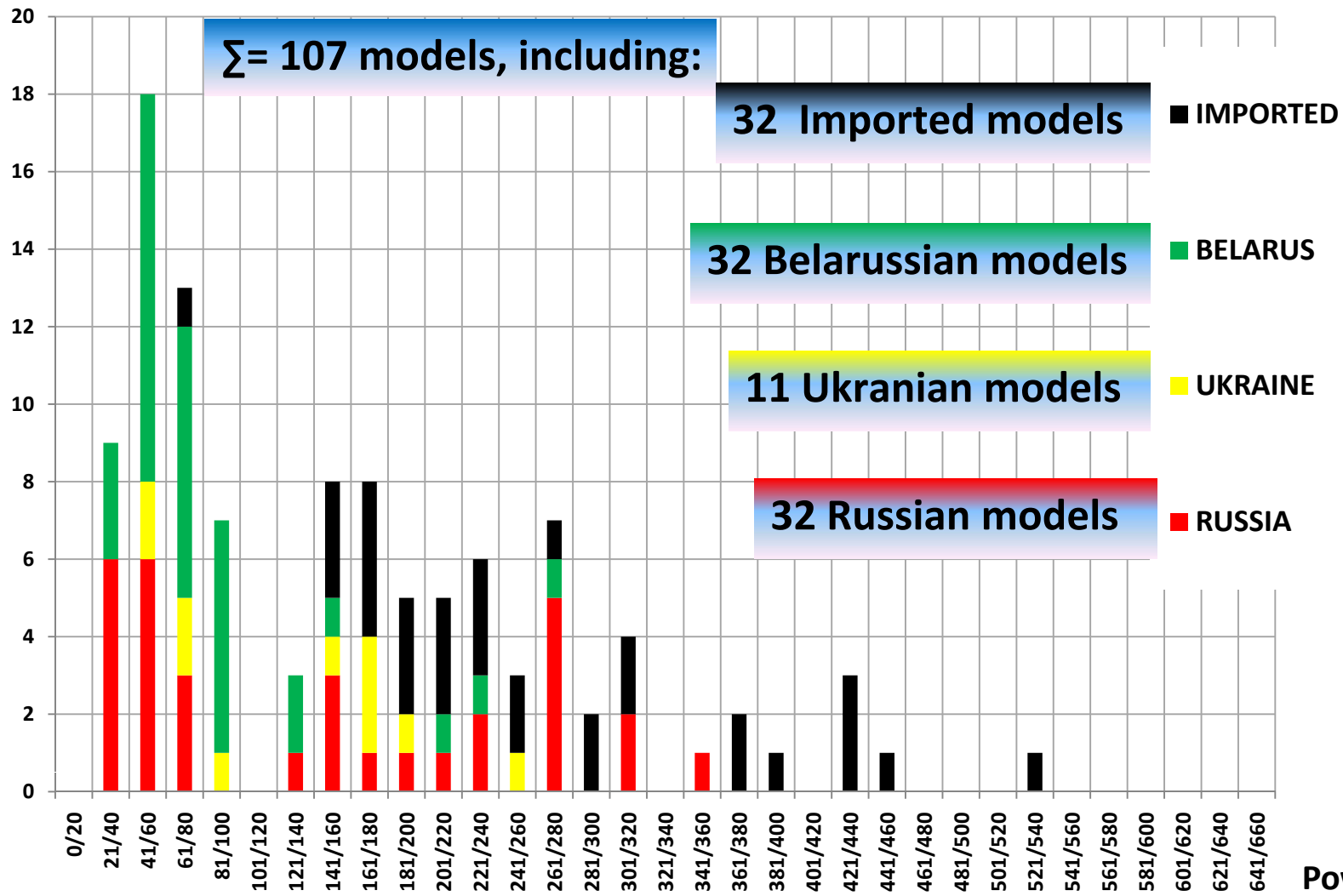
-application of the rotary working tools in harvest machines gives the possibility to support the optimal regime of the active working tools and to allow to regulate the parameters of technological processes of the cutting the forages and other materials.

INNOVATIONS IN CONSTRUCTION OF UNIVERSAL POWER UNIT

- application the modern engine (Euro-3) with “Common Rail system” and with optimal fuel consumption;**
- utilization of the engine power up to 100% from the front power take off and up to 60% - from rear one with a high efficiency;**
- aggregate UES with front and rear harvest machines and other machines with the active working tools;**
- application of the double flow hydro-mechanical transmissions to get the draw bar pull up to 50-60 kN and high efficiency on tillage, transportation and other operations;**
- improvement of the conditions of operator work, reversible post of steering, safety in work and maintenance of UES;**
- application of navigation system;**
- the high annually load of UES (1200-1500 hours) for fulfillment of different agricultural and other job in any time of the year;**

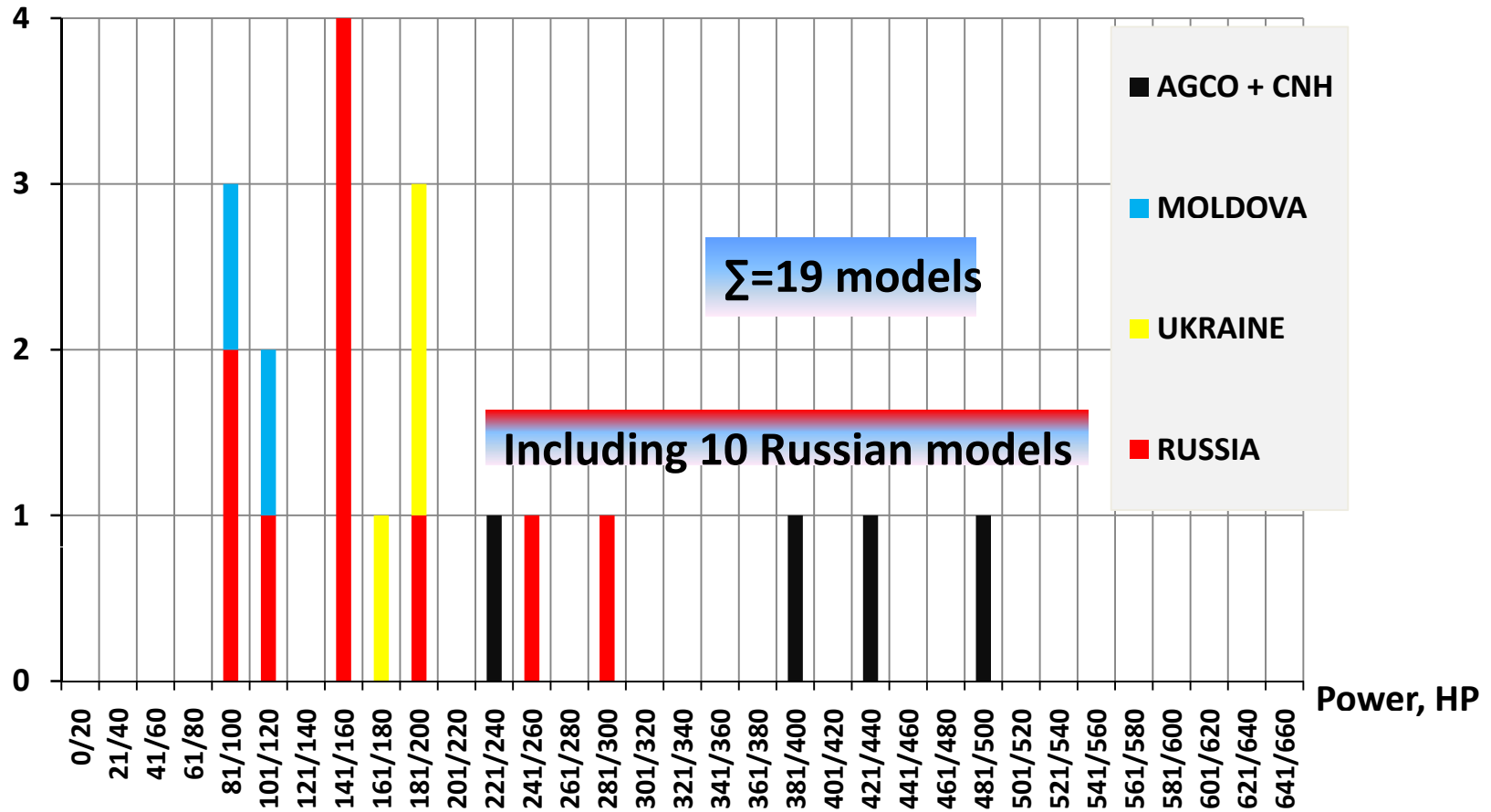
Market of wheeled Tractors in RUSSIA

Number of Models



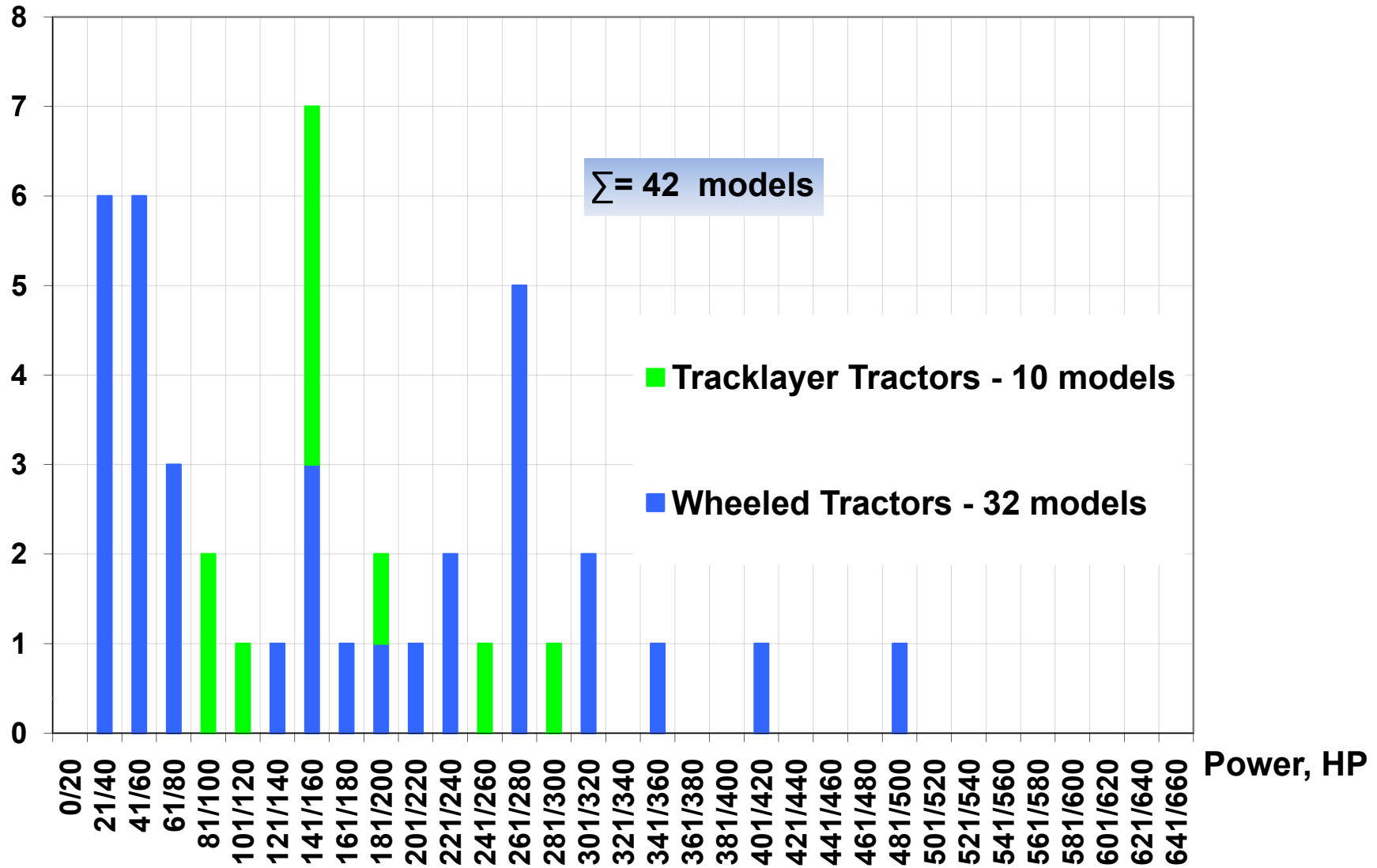
Market of Tracklayer Tractors in RUSSIA

Number of Models



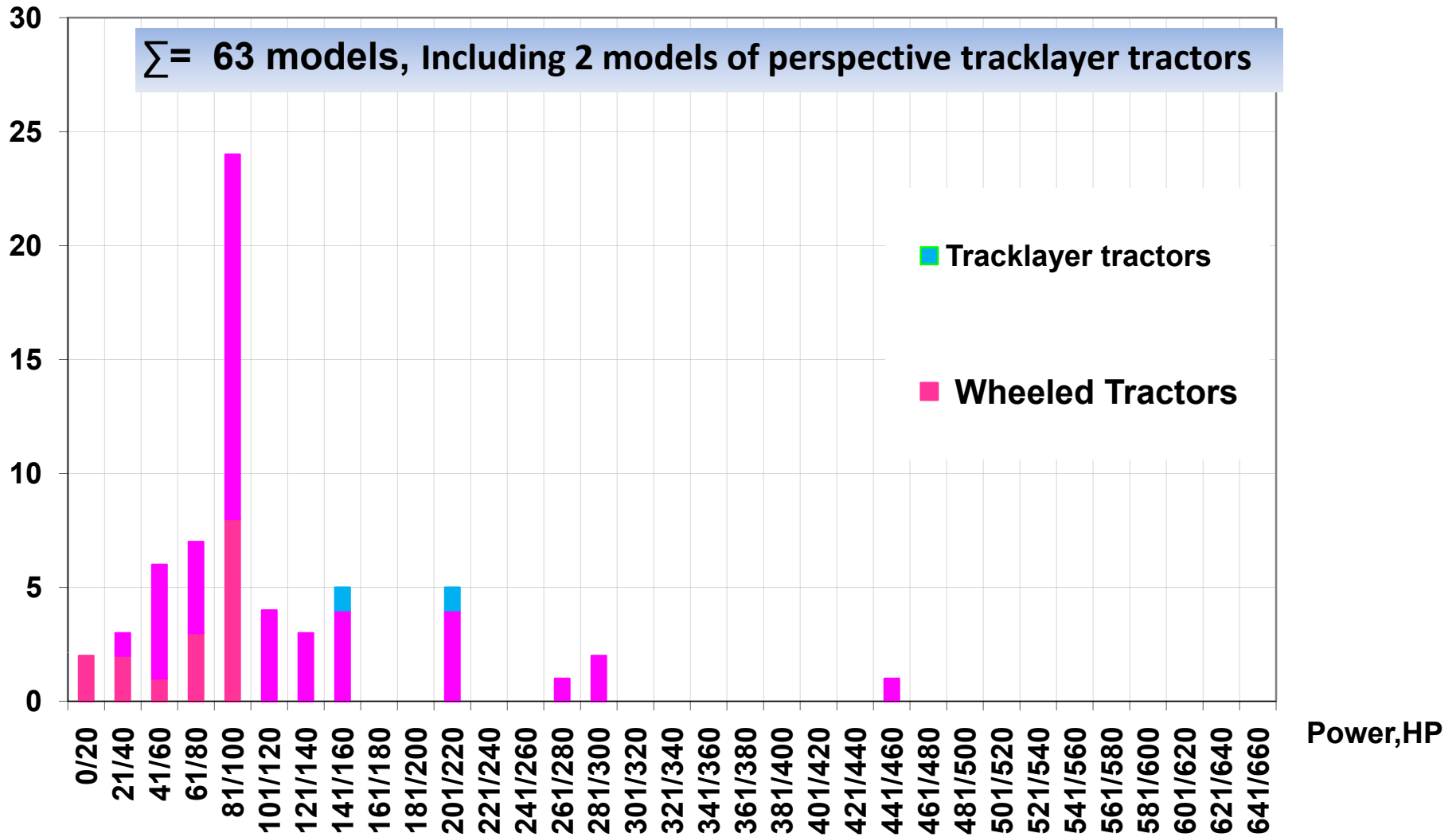
PRODUCTION of TRACTORS in RUSSIA

Number of Models



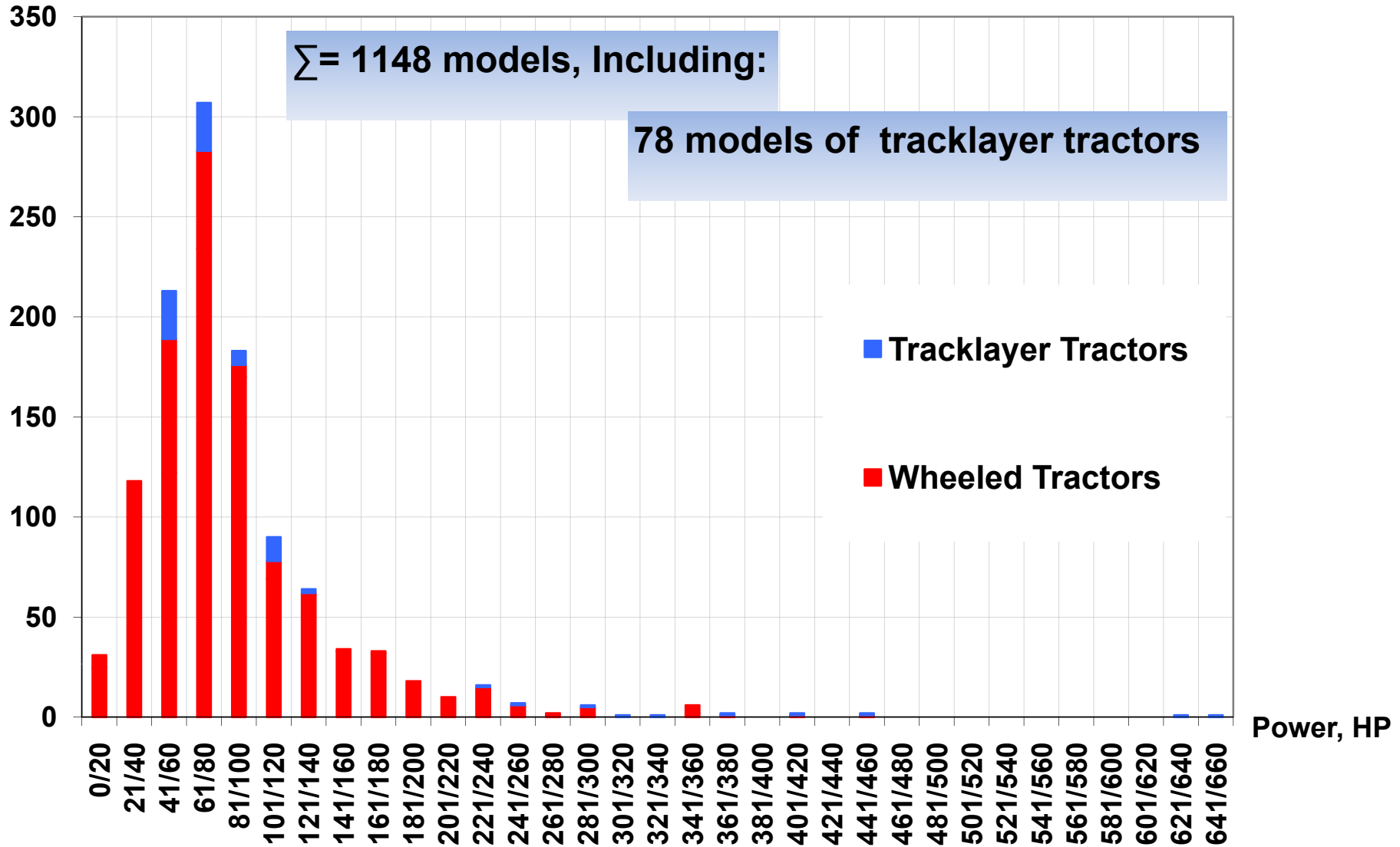
PRODUCTION of TRACTORS in BELARUS

Number of Models



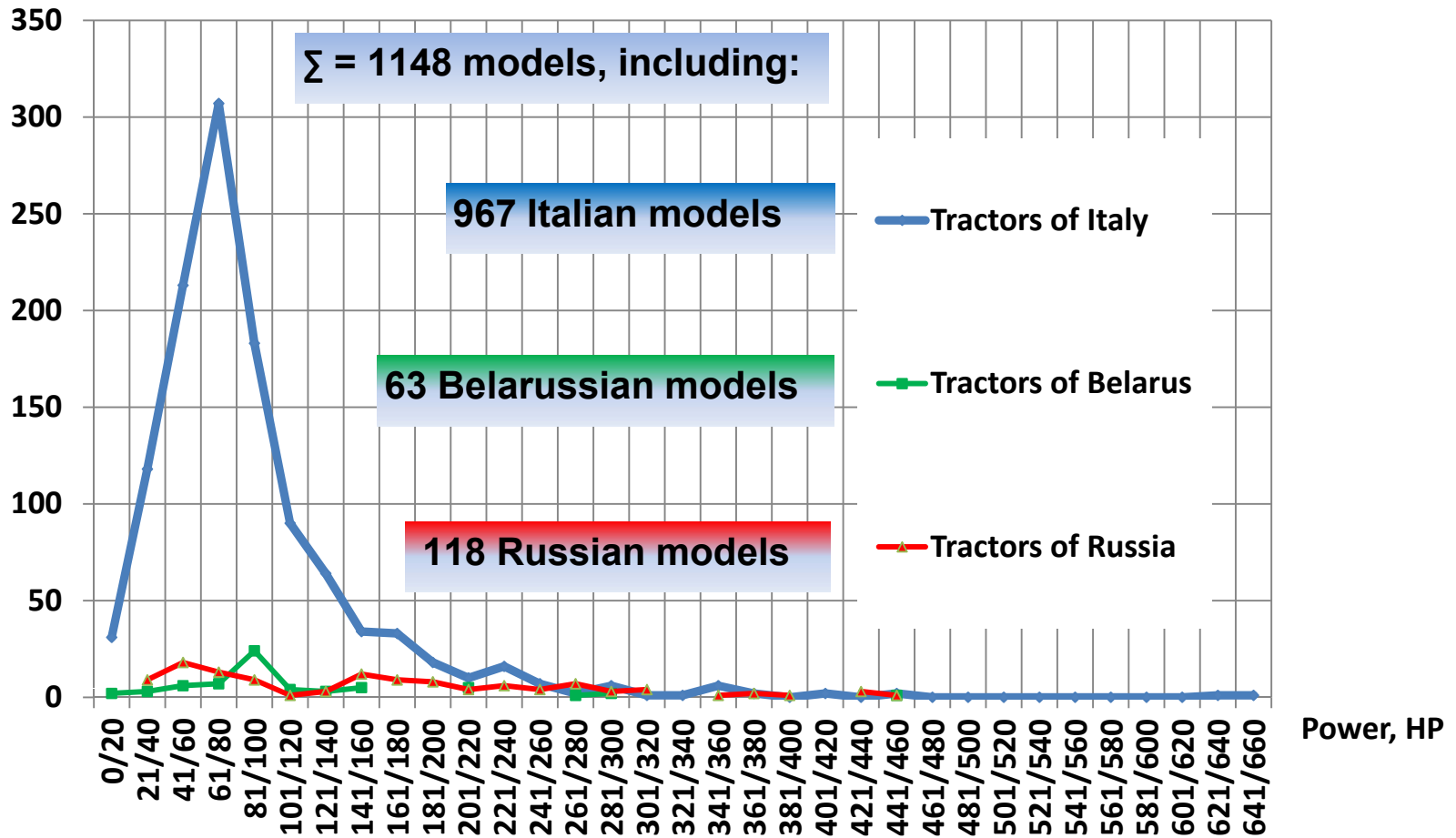
MARKET of TRACTORS in ITALY

Numbers of Models



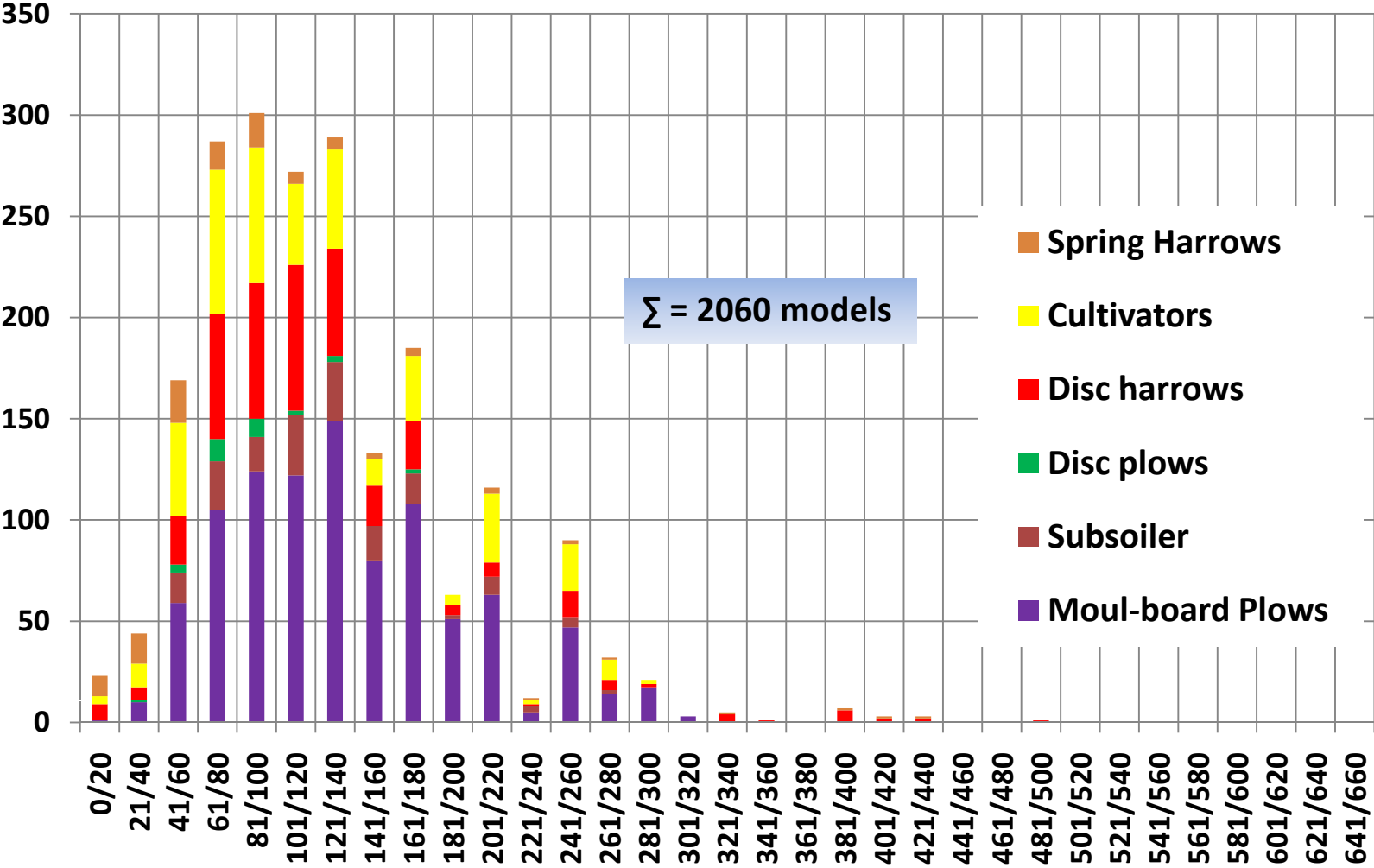
Comparison of Tractor Market (number of models) of Italy, Russia and Belarus

Number of Models



Market of Tillage machinery with passive working tools in ITALY

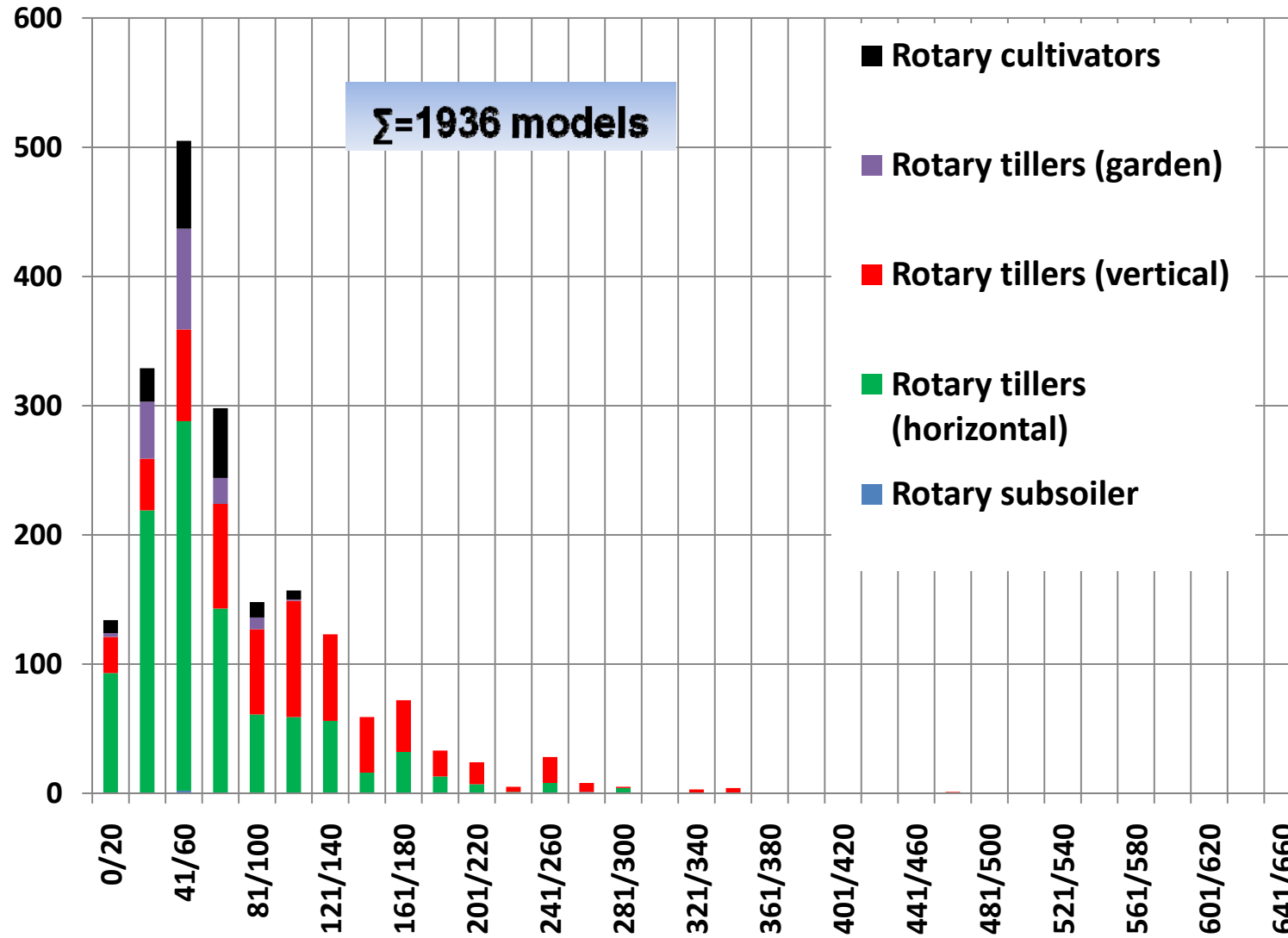
Number of Models



Power, HP

Market of Rotary tillage machinery in ITALY

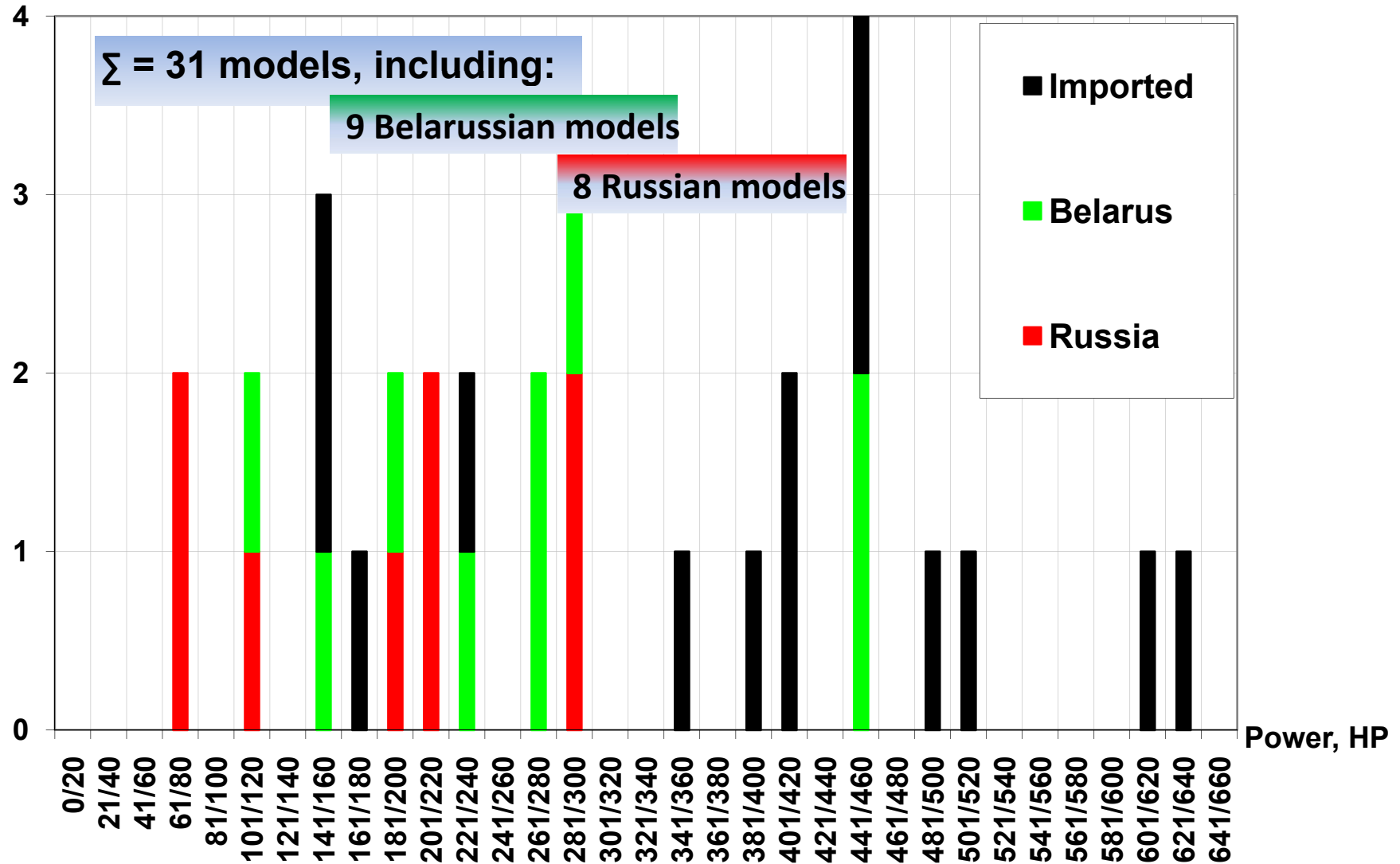
Number of Models



Power, HP

Market of Forage Harvesters (trailed, mounted and self-propelled) in RUSSIA

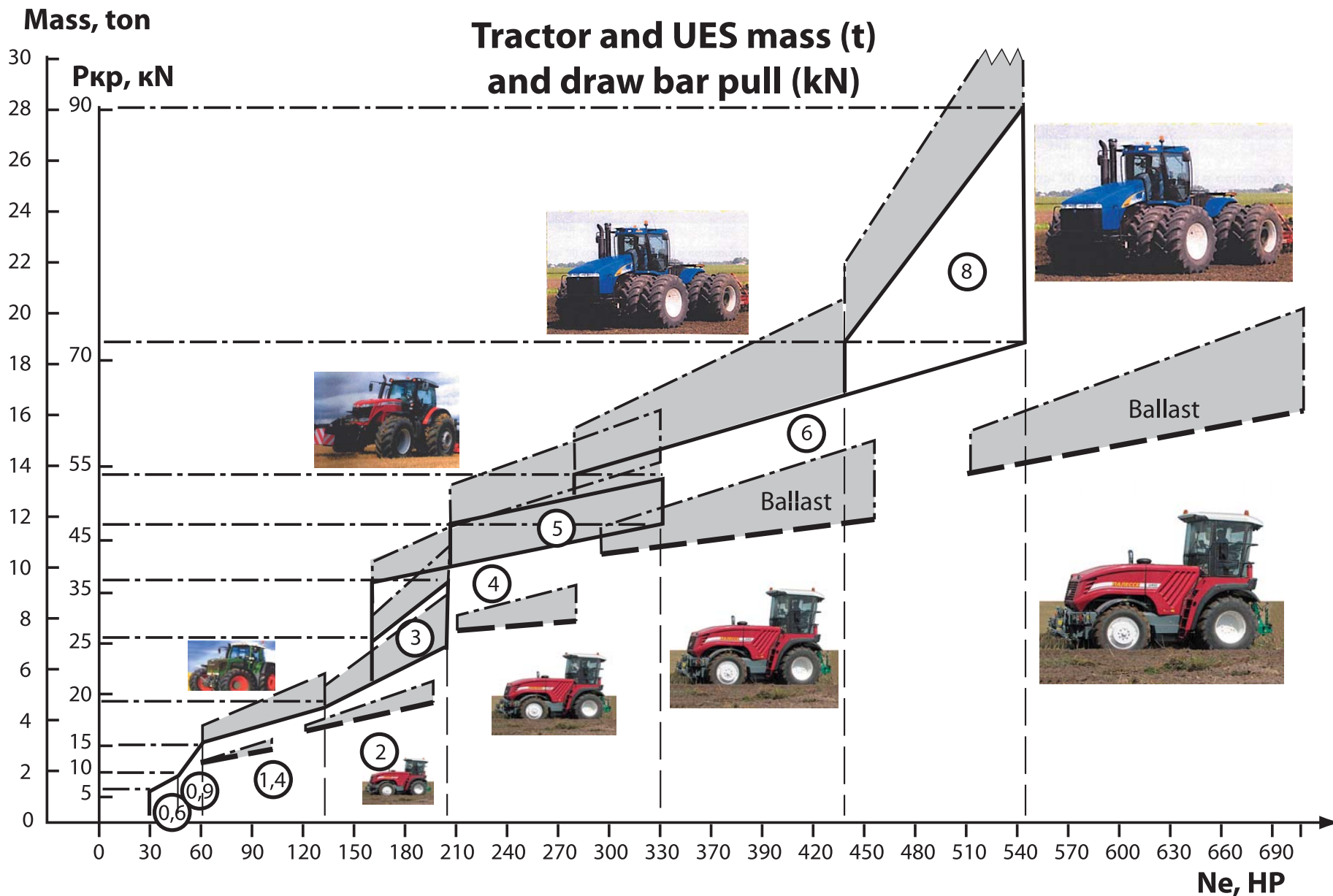
Number of Models



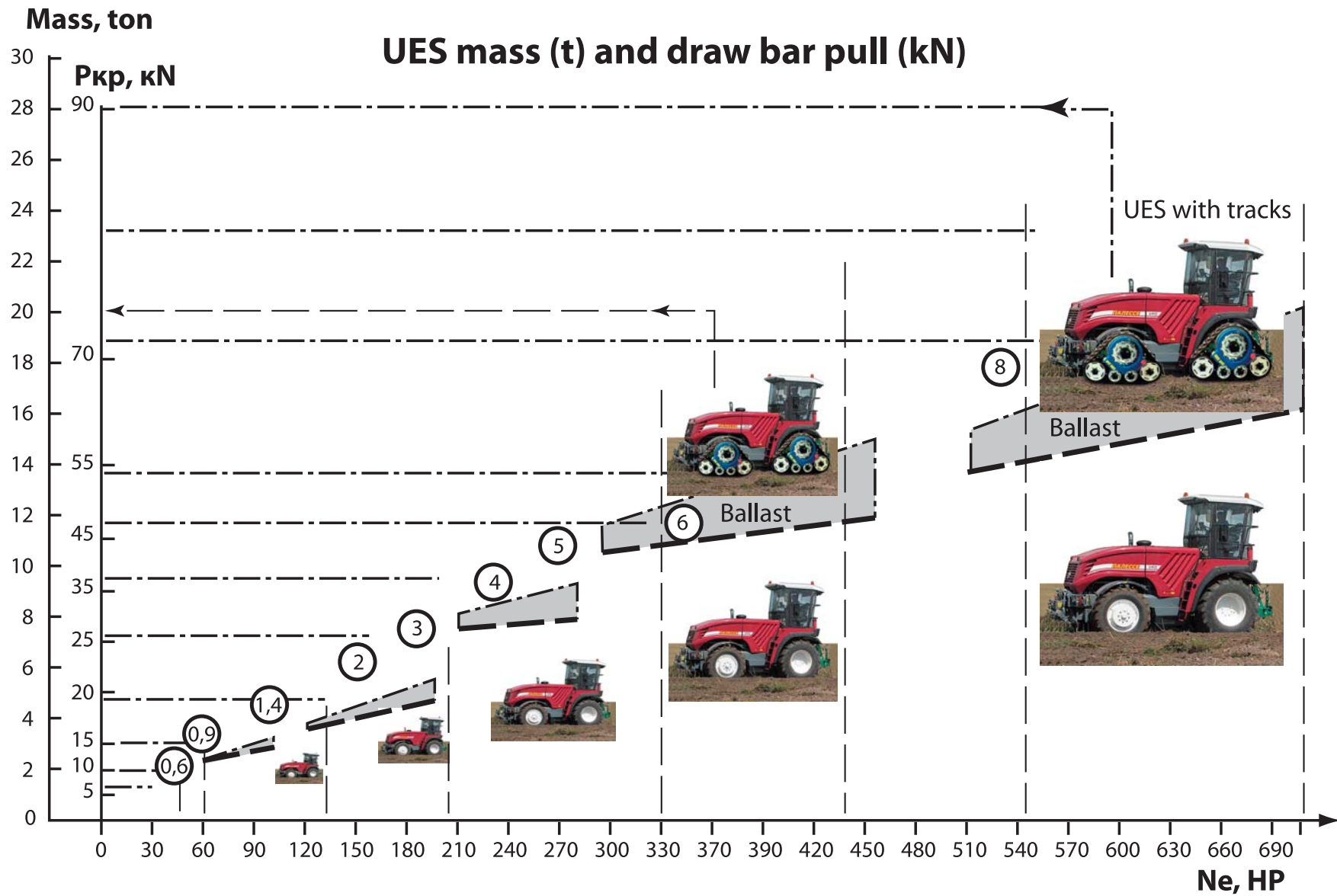
Tractor Fleets and Arable land Resources of the 8 Countries

№/ №	Country	Arable land, mln. ha	Tractor Fleet, Thous. units	Number of tractors per 1000 ha of arable land	Rate of load per one tractor, ha	
1.	RUSSIA	Agro-Enterprises	72,9 estim.	364,4	5,0	200,0
		Private farms	15,5	70,0	4,5	222,0
		Population plots	3,2	-	-	-
		Total	91,6	434,4	4,7	212,8
2.	USA		172,0	4760,0	28,0	35,7
3.	FRANCE		18,4	1264,0	69,0	14,5
4.	CANADA		45,9	733,0	16,0	62,5
5.	ITALY		8,0	1680,0	210,0	4,8
6.	GERMANY		11,9	944,0	79,0	12,7
7.	GREAT BRITAN		5,6	500,0	89,0	11,2
8.	JAPAN		4,7	2400,0	510,6	2,0

System of universal mobile power units: UES-60/100; UES-120/200; UES-210/280; UES-290/450; UES-500/700 (interval of power, HP)



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FUTURE OF RUSSIAN AGRICULTURE

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