

Cost Estimates

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Cost per unit in arbitrary units

	cost/unit	unit
Magnetic system		
dipole	41	dipole
quad	9	quad
sext	7	sext
steer	3	steer
Wigglers	34	m
Power supplies	1477	total
Vacuum system	3.4	m
Tunnel	17	m
RF system	544	MV
Diagnostics & control	23	quad
Electric system	0.25	m
Cooling system	0.37	m

- Numbers derived from the TESLA TDR
- Wiggler: PM optimized field
- Vacuum system: multiplied by 2 (p=10⁻⁹ mbar instead 10⁻⁸ in arcs and wigglers)
- Tunnel: Linac tunnel cost reduced by 3/5 for the smaller radius

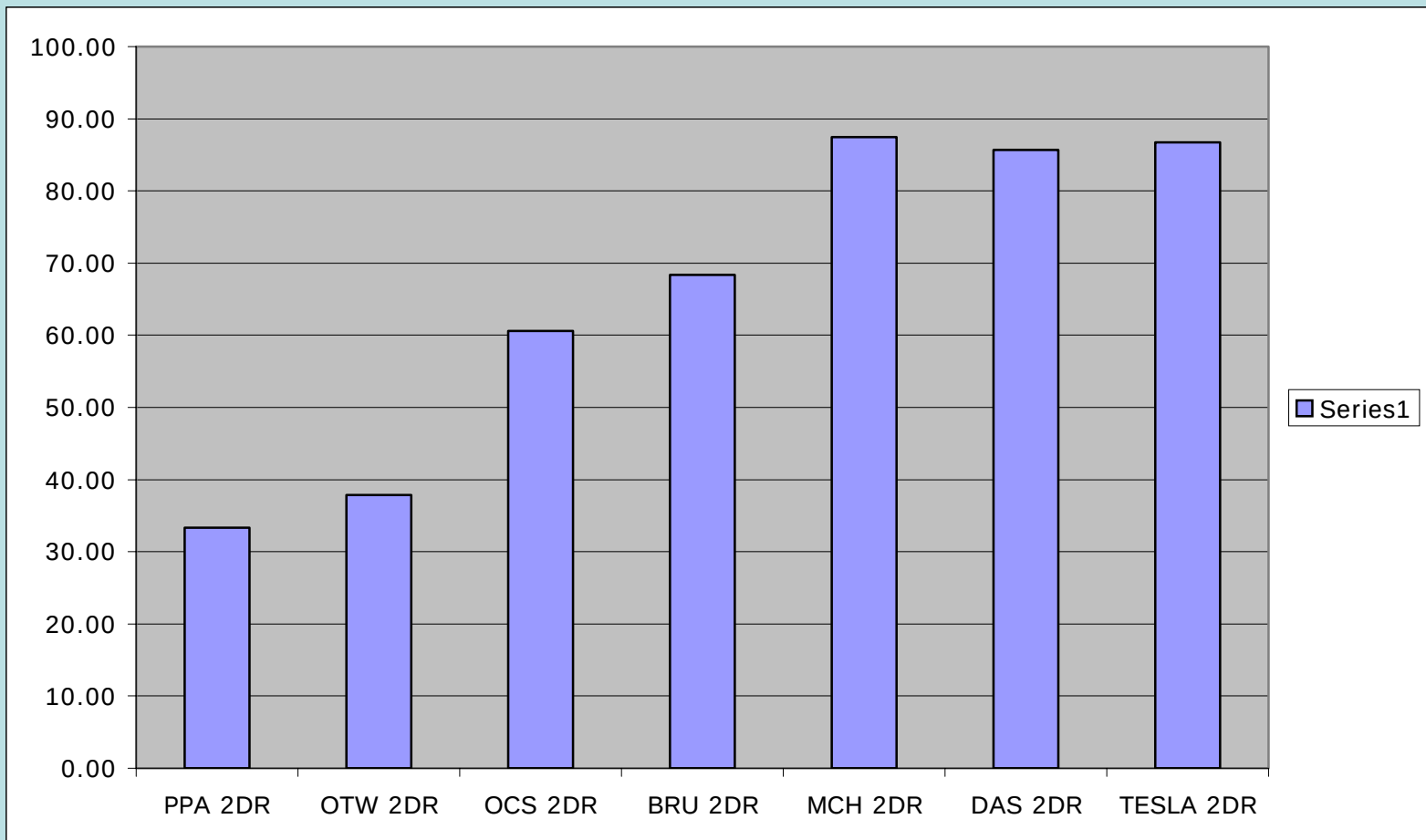
This is a very rough estimate, just to compare the different lattices

Total cost for the 7 lattices

	PPA 2DR	OTW 2DR	OCS 2DR	BRU 2DR	MCH 2DR	DAS 2DR	TESLA 2DR
Magnetic system	5.54	4.67	8.19	12.16	13.14	8.09	7.82
Wigglers	1.57	2.38	3.09	2.76	6.95	7.32	7.15
Power supplies	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Vacuum system	4.19	4.78	9.08	9.40	23.66	25.26	25.24
Tunnel	12.24	13.97	26.50	27.45	15.32	20.00	19.94
RF system	4.22	5.17	4.58	5.50	12.76	11.44	11.88
Diagnostics & control	4.17	5.37	6.83	8.77	10.65	8.35	9.45
Electric system	0.31	0.35	0.67	0.69	1.74	1.86	1.85
Cooling system	0.46	0.52	0.99	1.02	2.57	2.74	2.74
Total	41.50	47.18	78.23	86.69	97.63	99.03	100.00

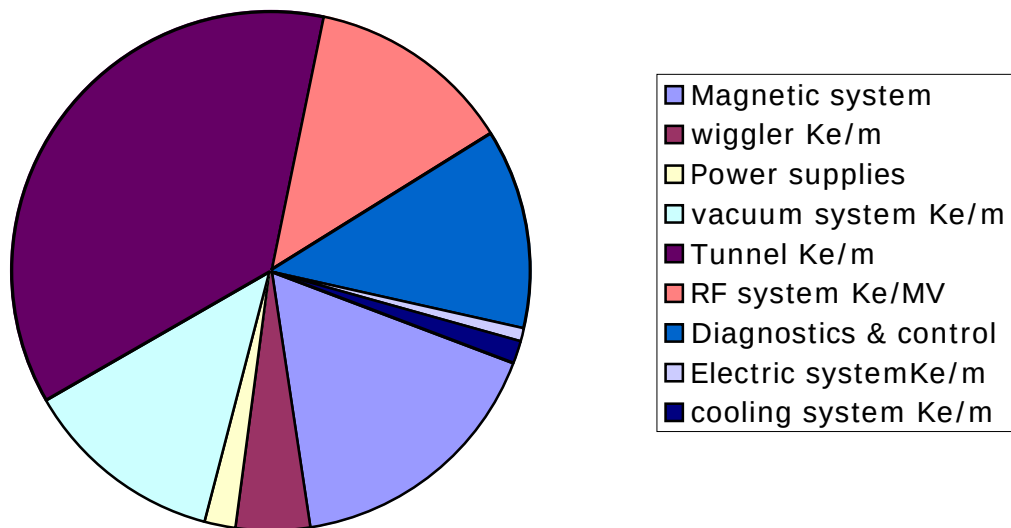
2 rings, arbitrary units

Total cost for the 7 lattices

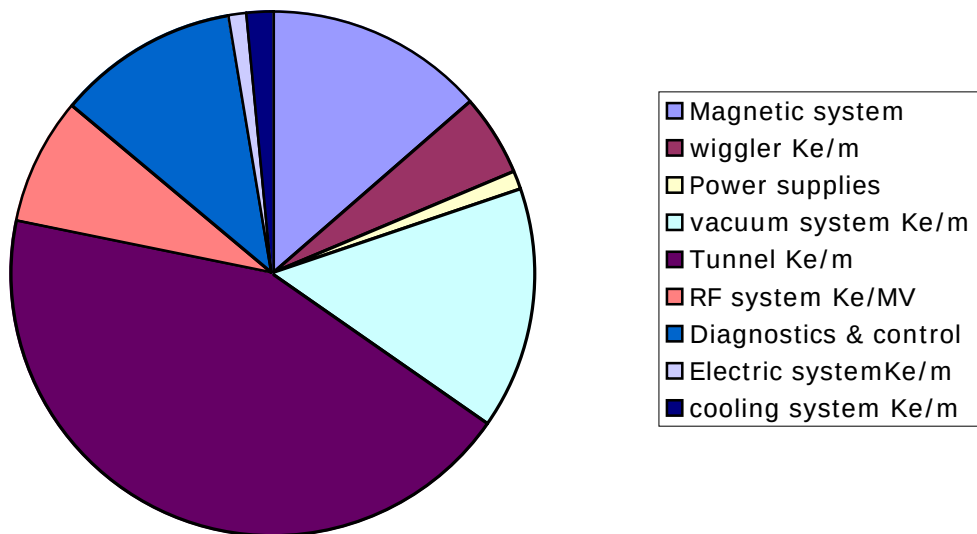


2 rings, arbitrary units

PPA

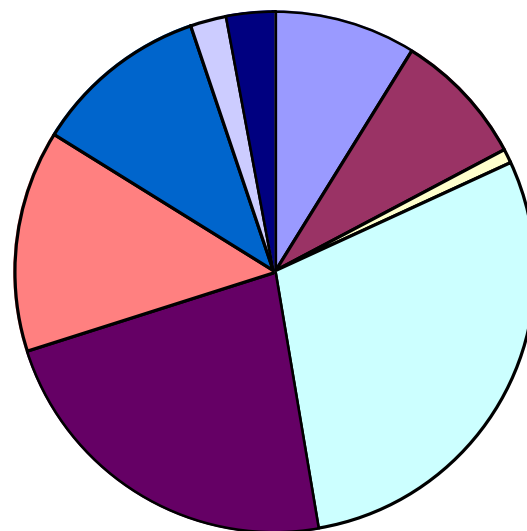


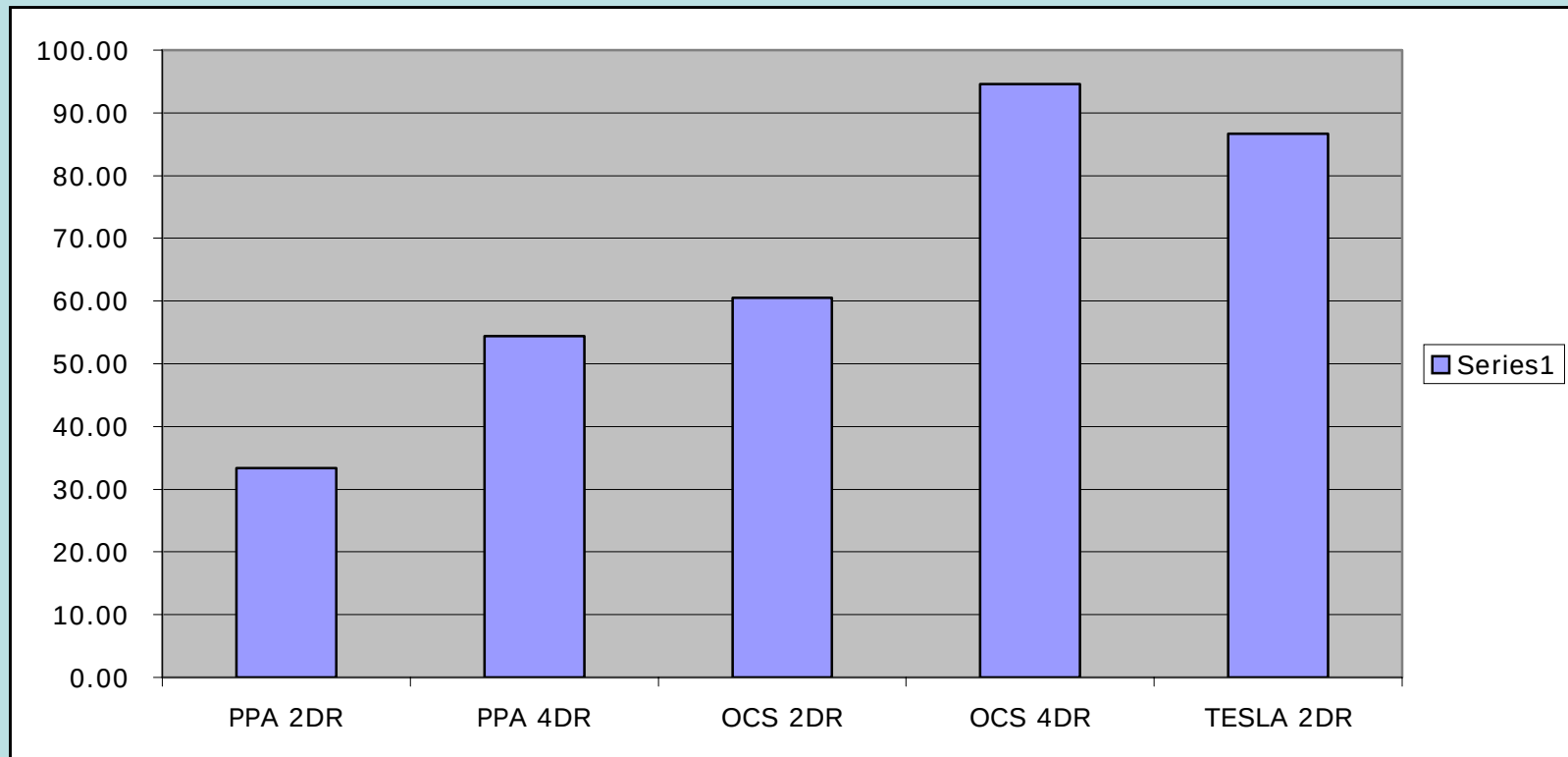
OCS



Cost Distribution

TESLA



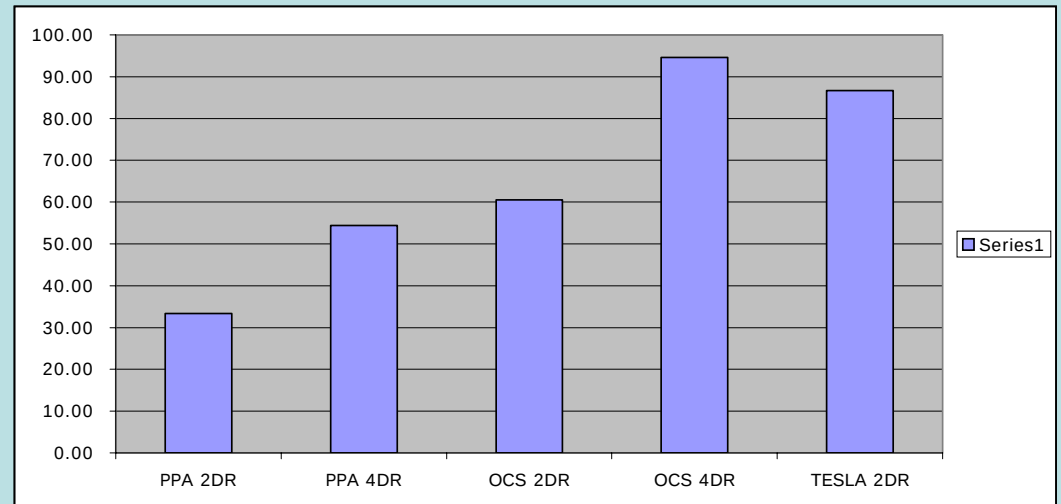


PPA 4DR 2 DR da ~ **3 Km** nello stesso tunnel

OCS 4DR 2 DR da ~ **6 Km** nello stesso tunnel

PPA 4DR 2 DR da ~ 3 Km nello stesso tunnel

OCS 4DR 2 DR da ~ 6 Km nello stesso tunnel



Increased
tunnel cost by
factor 1.7

