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THE PARAMETERS

This page illustrates the sensitivity of the cost of electricity to some key parameters governing the economics of nuclear power. It also details the full list of parameters (or baseline data) that figure in the cost of electricity calculations that this tool provides.

Datasets

Download Parameters

I. Key Parameter Sensitivities

All entries are in US cents per kilowatt-hour. Note that the levelized cost of electricity is quite insensitive to the price of uranium in these pricing ranges.

Interest Rate Sensitivity				
	At 0.1% interest rate	At 0.5% interest rate	At 1% interest rate	At 5% interest rate
Once Through	6.28	6.41	6.58	8.42
Full Recycle	10.02	10.26	10.58	13.84
MOX Recycle	19.42	19.63	19.91	22.76

Economic Lifetime Sensitivity			
	30 Years	60 Years	100 Years
Once Through	8.42	7.64	7.48
Full Recycle	13.84	12.42	12.13
MOX Recycle	22.76	21.51	21.26

Cost of Uranium Sensitivity*				
	45\$ per kg UF6	65\$ per kg UF6	85\$ per kg UF6	125\$ per kg UF6
Once Through	8.22	8.28	8.34	8.46
Full Recycle	13.84	13.84	13.84	13.84
MOX Recycle	22.76	22.76	22.76	22.76

II. Baseline Data

Baseline data used in the models are presented below. The nominal numbers you see were provided courtesy of the Nuclear Engineering Division at the Energy Department's Argonne National Laboratory. Slightly older data are available by clicking on the 'Datasets' button on the upper left side of the page. Values can be edited in the tables below to calculate new costs that can be downloaded for later reference.

Click values to edit

Once-Through		
Parameter	Units	Value
LWR Fuel Burnup/Utilization	GWd/t	43
Overnight Cost	\$/kWe	4050
Operation & Maintenance	Mill.\$/GWe-yr	302.9
Interest Rate	%	0.05
Uranium Price	\$/kgU	110
UF6 Conversion Cost	\$/kgU	12
Enrichment Cost	\$/SWU	26.0042
LWR Fuel Fabrication Cost	\$/kgHM	350
Spent Fuel Interim Dry Storage Cost	\$/kgHM	0
Geologic Disposal Cost	Mill. \$/kWe-hr	1
Fissile Product Conditioning Cost	\$/kg FP	4600
Reactor Construction Time	In Yrs.	7
Reactor Economic Lifetime	In Yrs.	30
LWR Reactor Capacity	MWe/yr	1000
LWR Capacity Factor		0.9
LWR Thermal Efficiency		0.32
LWR Inventory	kgHM/MWe	78
Fabrication Loss		0.01
Enrichment Loss		0.005
Conversion Loss		0.005
Feed Enrichment	%w/f of U235 in feed	0.00711
Tails Enrichment	%w/f of U235 in tails	0.003

Full Recycle		
Parameter	Units	Value
FR Fuel Burnup/Utilization	GWd/t	100
Spent LEU Reprocessing Cost	\$/kgHM	385
Overnight Cost	\$/kWe	4600
FR Operation & Maintenance	Mill.\$/GWe-yr	313
FR Fuel Reprocessing	\$/kgHM	6000
FR Fuel Fabrication Cost	\$/kgHM	826.67
High Level Waste Disposal Cost	\$/kgHM	5417
FR Capacity Factor		0.9
FR Thermal Efficiency		0.38
Transuranic (TRU) Waste Inventory	Metric Tons TRU/GWe	7.5
Loss of TRU during LEU Reprocessing		0.005
Loss of TRU in FR Fuel Fabrication		0.005
Loss of TRU in FR Fuel Reprocessing		0.005
Conversion Ratio		0.75

MOX Recycle		
Parameter	Units	Value
Pu Loss during MOX Fuel Fabrication		0.005
MOX Fuel Fabrication Cost	\$/kgHM	3750
MOX Fuel Burnup/Utilization	GWd/t	43

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