TECHNOLOGY FACTSHEET



NUCLEAR ENERGY: GENE		REACTORS										
		NLACION3)									
ate of factsheet uthor	26-7-2018 Silvana Gamboa Palacios											
ector	Electricity generation											
rs / Non-ETS	ETS											
ype of Technology	Nuclear energy											
escription	A nuclear reactor produces and controls the release of energy from splitting the atoms of certain elements. Then, the energy released in the nuclear power reactor is used as heat to ma steam to generate electricity. Most nuclear reactors use enriched uranium as a nuclear fuel.											
	The most common nuclear reactor design is the pressurised water reactor (PWR), which has water under pressure at over 300°C in its primary cooling/heat transfer circuit and generate steam in a secondary circuit. The boiling water reactor (BWR) design however, makes steam in the primary circuit above the reactor core, at similar temperatures and pressure. Both types and the primary circuit above the reactor core are similar temperatures and pressure.											
	use water as both coolant and moderator, to slow neutrons (World Nuclear Association, 2018).											
	Pressuriser Control rods Control rods Steel pressure vessel Fuel elements	eam , of the second sec	team ∕ater									
L level 2020	Source: World Nuclear Association TRL 9	(2018)										
	Most of the anticipated growth in PWRs or BWRs. Generation-III read		-				-		-			
ECHNICAL DIMENSIONS												
	Functional Unit					V	alue and Rar	ige				
pacity	MW		500			1,600			3,300			
otential	MW		Current Unlimited			2030 Unlimited				2050 Unlimited	ł	
larket share		%	-	-	-							
arket snare	OECD Europe	%	25	- 25	25	-	N/A _	-	-	N/A _	-	
pacity utlization factor					1			0.92		1		
II-load running hours per year nit of Activity	Pl/voar							8,000)			
chnical lifetime (years)	PJ/year							60.00)			
ogress ratio								0.90				
-												
ourly profile	No The main capacity refers to the EP averaged over the entire 60 years The potential for the generation-II	of its operation lif	etime (IET, 201	7). IEA/NEA (20	015) states a ca	pacity factor of a	85% for a nuc	lear power plan	it.			
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