## **TECHNOLOGY FACTSHEET**



Date of factsheet	DRK LOW-VOLTAGE										
uthor	Ricardo Hernandez										
ector	Infrastructure										
TS / Non-ETS	Non-ETS										
ype of Technology	Network										
escription	A low-voltage network (LV) is part of the distribution system that carries electric energy to end-consumers. The LV networks start from the output side of the MV-LV transformers. The transformers directly feed the different loads, thus constituting the last step in distributing electricity. The voltages used are 220/127 V and 380/220 V, which is regularly equal the voltage of electric appliances.										
	The topology of these networks depends on the operation voltage, amount of required phases (3 or 1) and the required reliability. The electrical cables can be overhead lines, underground or a mix of both.										
RL level 2020	TRL 9 Commercial technology										
ECHNICAL DIMENSIONS	commercial technology										
Canacity	Functional Unit					Value and Rang	ge				
Capacity	km		Min			-			Мах		
Pote			Current			2030			2050		
ote otial			Min	-	Max	Min	-	Max	Min	-	Мах
Mark		%						- -			
et har e				-			-			-	
Capacity utlization factor			Min	-	Max	Min	-	Max 1.0	Min 00	-	Max
ull-load running hours per year Init of Activity											
Fechnical lifetime (years)								40.	00		
Progress ratio										-	
lourly profile	No Non-OECD countries are expected t	0 account for t	he majority of	investments in	transmission	nd distribution	networks Inv	estments are r	equired for aria	expansion and	to enable
	consumers to access electricity. In t Depending on the region, the cost f	otal, the lengt	h of the global t	transmission a	nd distribution i	network is exp	ected to increa	ise from 25 Mk	m in 2012 to 9	3 Mkm in 2035	[6].
COSTS											
'ear of Euro	2015 Euro per Eunctional U	nit		Current			2030			2050	
nvestment costs	Euro per Functional Unit mln. € / km		0.05	0.05 -	0.07	0.05	0.05	0.07	0.05	0.05	0.07
)ther costs per year	mln. € / km		Min	-	Max	Min	-	Мах	Min	-	Max
ixed operational costs per year excl. fuel costs)	mln.€/km		Min		Max	Min		Max	Min	-	Мах
/ariable costs per year	mln.€/		Min	-	Мах	Min	-	Max	Min	-	Мах
Costs explanation	Costs are based on cable design to o dependant on the network characte varies according to the conductor's	eristics, i.e. rura	V. The cost only al or densely po	y takes into acc opulated areas	ount the cost o - LV cables desi	f the cables. C gned to opera	te at 750V curr	installation ar	e not accounte		highly
ENERGY IN- AND OUTPUTS	Energy carrier	Current			2030			2050			
	Main output:	Unit PJ		-0.98			-0.98	•		-0.98	
Energy carriers (per unit of main output)	Electricity		-0.98	- 1.00	-0.98	-0.98	- 1.00	-0.98	-0.98	- 1.00	-0.98
	Electricity	PJ	1.00	-	1.00	1.00	-	1.00	1.00	-	1.00
							-			-	Мах
	Propane	PJ	1.41-	-	A. 4	1.4		0.4	A 41		
			Min	- - -	Max	Min	-	Max	Min	-	IVIUX
	Propane	PJ	Min	- - -	Max	Min	-	Мах	Min	-	Max
Energy in- and Outputs		PJ e majority of th countries, i.e. a	Min ne total transm round 5%, with	- - ission and distr n similar infrast	Max ribution losses. ructure and pop	<i>Min</i> Failure proble pulation densi	- - ms in distributi ty [4]. For the N	Max on networks o	Min ccur more ofter	- – n than transmis	<i>Max</i> sion. The
Energy in- and Outputs	Propane Distribution systems account for the energy loss is similar in developed of part is due to cable losses and trans	PJ e majority of th countries, i.e. a former losses.	Min ne total transm round 5%, with	- - ission and distr n similar infrast lso account for	Max ribution losses. ructure and pop	<i>Min</i> Failure proble pulation densi	- ms in distributi ty [4]. For the N d 1,9% [4].	Max on networks o	Min ccur more ofter	- – n than transmis: s are around 4%	<i>Max</i> sion. The
Energy in- and Outputs explanation	Propane Distribution systems account for the energy loss is similar in developed of	PJ e majority of th countries, i.e. a	Min ne total transm round 5%, with	- - ission and distr n similar infrast	Max ribution losses. ructure and pop	<i>Min</i> Failure proble pulation densi	- - ms in distributi ty [4]. For the N	Max on networks o	Min ccur more ofter	- – n than transmis	<i>Max</i> sion. The
inergy in- and Outputs explanation	Propane Distribution systems account for the energy loss is similar in developed of part is due to cable losses and trans	PJ e majority of th countries, i.e. a former losses.	Min ne total transm round 5%, with	- - ission and distr similar infrast lso account for Current - -	Max ribution losses. ructure and pop	<i>Min</i> Failure proble pulation densi	- ms in distributi ty [4]. For the N d 1,9% [4].	Max on networks o	Min ccur more ofter	- n than transmis: s are around 4% 2050	<i>Max</i> sion. The
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