Table 19: Capital and operating cost assumptions for all technologies⁷⁷

		(CGT H Clas	S	(CCGT F Clas	s	CC	GT CHP mo	ode	OCG.	Γ 600MW 5	00 hr
Reference plant size	MW		1,200			1,471			168			625	
Average load factor	%		93%			93%			93%			6%	
(net of availability)													
Efficiency (HHV)	%		54%			53%			34%			35%	
Pre-development period	Duration and % spend per years 1 & 2	2 years	44%	44%	2 years	44%	44%	2 years	43.5%	43.5%	2 years	55.6%	44.4%
	% spend per years 3, 4, & 5	12%			12%			13%					
	% spend per years 6, 7, & 8												
Construction period	Duration and % spend per years 1 & 2	3 years	40%	40%	3 years	40%	40%	3 years	40%	40%	2 years	50%	50%
	% spend per years 3, 4, & 5	20%			20%			20%					
	% spend per years 6, 7, & 8												
Operating period	Duration	25 years			25 years			25 years			25 years		
		Com	missioning	year	Com	missioning	year	Com	missioning	year	Com	missioning	year
		2018	2020	2025	2018	2020	2025	2018	2020	2025	2018	2020	2025
Pre-development	High	20	20	20	10	10	10	80	80	80	20	20	20
£/kW	Medium	10	10	10	10	10	10	60	60	60	20	20	20
	Low	10	10	10	10	10	10	30	30	30	20	20	20
Construction	High	600	600	600	500	600	600	800	800	900	300	300	300
£/kW	Medium	500	500	500	500	500	500	700	700	700	300	300	300
	Low	400	400	400	400	400	400	600	600	600	300	300	300
Infrastructure	High	30,200	30,200	30,200	30,200	30,200	30,200	27,100	27,100	27,100	30,200	30,200	30,200
£'000s	Medium	15,100	15,100	15,100	15,100	15,100	15,100	13,600	13,600	13,600	15,100	15,100	15,100
	Low	7,600	7,600	7,600	7,600	7,600	7,600	6,800	6,800	6,800	7,600	7,600	7,600
Fixed O&M	Medium	12,200	12,200	12,200	11,400	11,400	11,400	28,200	28,200	28,200	4,600	4,600	4,600
£/MW/year													
Variable O&M	Medium	3	3	3	3	3	3	5	5	5	3	3	3
£/MWh													
Insurance	Medium	2,100	2,100	2,100	1,900	1,900	1,900	2,900	2,900	2,900	1,200	1,200	1,200
£/MWh/year													
Connection and Use of System charges £/MW/year	Medium	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300	2,400	2,400	2,400

⁷⁷ For the tables in this section (except for onshore and offshore wind) the load factor quoted is the same for all commissioning years. Refer to relevant table notes for exceptions related to onshore and offshore wind.

		OCG	T 400MW 5	00 hr	ocg	T 300MW 5	00 hr	OCGT	299MW 5	00 hr	ocg.	Γ 100MW 5	00 hr
Reference plant size	MW		400			311			299			96	
Average load factor	%		6%			6%			6%			6%	
(net of availability)													
Efficiency (HHV)	%		34%			35%			35%			35%	
Pre-development period	Duration and % spend per years 1 & 2	2 years	55.6%	44.4%	2 years	55.6%	44.4%	2 years	55.6%	44.4%	2 years	55.6%	44.4%
	% spend per years 3, 4, & 5												
	% spend per years 6, 7, & 8												
Construction period	Duration and % spend per years 1 & 2	2 years	50%	50%	2 years	50%	50%	2 years	50%	50%	2 years	50%	50%
	% spend per years 3, 4, & 5												
	% spend per years 6, 7, & 8												
Operating period	Duration	25 years			25 years			25 years			25 years		
		Commissioning year 2018 2020 2025				missioning	year	Com	missioning	year	Com	missioning	year
		2018	2020	2025	2018	2020	2025	2018	2020	2025	2018	2020	2025
Pre-development	High	30	30	30	40	40	40	40	40	40	90	90	90
£/kW	Medium	30	30	30	30	30	30	30	30	30	80	80	80
	Low	20	20	20	30	30	30	30	30	30	70	70	70
Construction	High	400	400	400	600	700	700	600	700	700	800	800	800
£/kW	Medium	300	300	300	400	400	400	400	400	400	600	600	600
	Low	300	300	300	300	300	300	300	300	300	600	600	600
Infrastructure	High	30,200	30,200	30,200	27,100	27,100	27,100	27,100	27,100	27,100	25,100	25,100	25,100
£'000s	Medium	15,100	15,100	15,100	13,600	13,600	13,600	13,600	13,600	13,600	12,600	12,600	12,600
	Low	7,600	7,600	7,600	6,800	6,800	6,800	6,800	6,800	6,800	6,300	6,300	6,300
Fixed O&M	Medium	5,200	5,200	5,200	6,300	6,300	6,300	6,400	6,400	6,400	9,900	9,900	9,900
£/MW/year													
Variable O&M	Medium	3	3	3	3	3	3	3	3	3	4	4	4
£/MWh													
Insurance	Medium	1,300	1,300	1,300	1,600	1,600	1,600	1,600	1,600	1,600	2,500	2,500	2,500
£/MWh/year													
Connection and Use of System	Medium	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400
charges £/MW/year													

		OCGT	600MW 20	000 hr	OCGT	400MW 20	000 hr	OCGT	300MW 20	000 hr	OCGT	299MW 2	000 hr
Reference plant size	MW		625			400			311			299	
Average load factor	%		22%			22%			22%			22%	
(net of availability)													
Efficiency (HHV)	%		35%			34%			35%			35%	,
Pre-development period	Duration and % spend per years 1 & 2	2 years	55.6%	44.4%	2 years	55.6%	44.4%	2 years	55.6%	44.4%	2 years	55.6%	44.4%
	% spend per years 3, 4, & 5												
	% spend per years 6, 7, & 8												
Construction period	Duration and % spend per years 1 & 2	2 years	50%	50%	2 years	50%	50%	2 years	50%	50%	2 years	50%	50%
	% spend per years 3, 4, & 5												
	% spend per years 6, 7, & 8												
Operating period	Duration	25 years			25 years			25 years			25 years		
		Commissioning year 2018 2020 2025			Com	missioning	year	Com	missioning	year	Com	missioning	year ,
		2018	2020	2025	2018	2020	2025	2018	2020	2025	2018	2020	2025
Pre-development	High	20	20	20	30	30	30	40	40	40	40	40	40
£/kW	Medium	20	20	20	30	30	30	30	30	30	30	30	30
	Low	20	20	20	20	20	20	30	30	30	30	30	30
Construction	High	300	300	300	400	400	400	600	700	700	600	700	700
£/kW	Medium	300	300	300	300	300	300	400	400	400	400	400	400
	Low	300	300	300	300	300	300	300	300	300	300	300	300
Infrastructure	High	30,200	30,200	30,200	30,200	30,200	30,200	27,100	27,100	27,100	27,100	27,100	27,100
£'000s	Medium	15,100	15,100	15,100	15,100	15,100	15,100	13,600	13,600	13,600	13,600	13,600	13,600
	Low	7,600	7,600	7,600	7,600	7,600	7,600	6,800	6,800	6,800	6,800	6,800	6,800
Fixed O&M	Medium	6,800	6,800	6,800	7,800	7,800	7,800	9,500	9,500	9,500	9,600	9,600	9,600
£/MW/year													
Variable O&M	Medium	3	3	3	3	3	3	3	3	3	3	3	3
£/MWh													
Insurance	Medium	1,200	1,200	1,200	1,300	1,300	1,300	1,600	1,600	1,600	1,600	1,600	1,600
£/MWh/year													
Connection and Use of System charges £/MW/year	Medium	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500

		осст	100MW 20	000 hr	Reci	p Diesel 20	00 hr	Recij	p Diesel 50	0 hrs	Rec	ip Diesel 90) hrs
Reference plant size	MW		96			20			20			20	
Average load factor (net of availability)	%		22%			22%			5%			1%	
Efficiency (HHV)	%		35%			34%			34%			34%	
Pre-development period	Duration and % spend per years 1 & 2	2 years	55.6%	44.4%	2 years	50%	50%	2 years	50%	50%	2 years	50%	50%
	% spend per years 3, 4, & 5												
	% spend per years 6, 7, & 8												
Construction period	Duration and % spend per years 1 & 2	2 years	50%	50%	1 years	100%		1 years	100%		1 years	100%	
	% spend per years 3, 4, & 5												
	% spend per years 6, 7, & 8												
Operating period	Duration	25 years			15 years			15 years			15 years		
		Commissioning year 2018 2020 2025			Com	missioning	year	Com	missioning	year	Com	missioning	year
		2018	2020	2025	2018	2020	2025	2018	2020	2025	2018	2020	2025
Pre-development	High	90	90	90	20	20	20	20	20	20	20	20	20
£/kW	Medium	80	80	80	10	10	10	10	10	10	10	10	10
	Low	70	70	70	10	10	10	10	10	10	10	10	10
Construction	High	800	800	800	300	300	300	300	300	300	300	300	300
£/kW	Medium	600	600	600	300	300	300	300	300	300	300	300	300
	Low	600	600	600	200	200	200	200	200	200	200	200	200
Infrastructure	High	25,100	25,100	25,100	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500
£'000s	Medium	12,600	12,600	12,600	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200
	Low	6,300	6,300	6,300	400	400	400	400	400	400	400	400	400
Fixed O&M	Medium	14,800	14,800	14,800	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
£/MW/year													
Variable O&M	Medium	4	4	4	2	2	2	2	2	2	2	2	2
£/MWh													
Insurance	Medium	2,500	2,500	2,500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
£/MWh/year													
Connection and Use of System charges £/MW/year	Medium	2,500	2,500	2,500	- 31,900	- 31,900	- 31,900	- 28,500	- 28,500	- 28,500	- 28,000	- 28,000	- 28,000

		Rec	ip Gas 200) hr	REC	IP GAS 500) hrs	Nucle	ear - PWR I	OAK	Pu	mped stora	age
Reference plant size	MW		20			20			3,300			600	
Average load factor	%		22%			5%			90%			21%	
(net of availability)													
Efficiency (HHV)	%		32%			32%			100%			77%	
Pre-development period	Duration and % spend per years 1 & 2	2 years	50%	50%	2 years	50%	50%	5 years	20%	20%	5 years	20%	20%
	% spend per years 3, 4, & 5							20%	20%	20%	20%	20%	20%
	% spend per years 6, 7, & 8												
Construction period	Duration and % spend per years 1 & 2	1 years	100%		1 years	100%		8 years	5%	5%	5 years	22.2%	22.2%
	% spend per years 3, 4, & 5							20%	20%	20%	22.2%	22.2%	11.1%
	% spend per years 6, 7, & 8							20%	5%	5%			
Operating period	Duration	15 years			15 years			60 years			50 years		
		Commissioning year 2018 2020 2025				missioning	year	Com	missioning	year	Com	missioning	year
		2018	2020	2025	2018	2020	2025	2018	2020	2025	2018	2020	2025
Pre-development	High	20	20	20	20	20	20	-	-	640	50	50	50
£/kW	Medium	10	10	10	10	10	10	-	-	240	40	40	40
	Low	10	10	10	10	10	10	-	1	110	30	30	30
Construction	High	300	300	300	300	300	300	-	-	5,100	1,500	1,500	1,600
£/kW	Medium	300	300	300	300	300	300	-	-	4,100	1,000	1,000	1,000
	Low	300	300	300	300	300	300	-	-	3,700	700	700	700
Infrastructure	High	10,300	10,300	10,300	10,300	10,300	10,300	-	-	50,000	50,000	50,000	50,000
£'000s	Medium	3,400	3,400	3,400	3,400	3,400	3,400	-	-	11,500	25,000	25,000	25,000
	Low	700	700	700	700	700	700	-	-	-	10,000	10,000	10,000
Fixed O&M	Medium	10,000	10,000	10,000	10,000	10,000	10,000	-	-	72,900	11,200	11,200	11,200
£/MW/year													
Variable O&M	Medium	2	2	2	2	2	2	-	-	5	42	42	42
£/MWh													
Insurance	Medium	1,000	1,000	1,000	1,000	1,000	1,000	-	-	10,000	4,100	4,100	4,100
£/MWh/year													
Connection and Use of System	Medium	- 31,900	- 31,900	- 31,900	- 28,500	- 28,500	- 28,500		-	500	15,800	15,800	15,800
charges £/MW/year													

		Gas - Co	CS CCGT Po	st FOAK	Gas - CC	CS CCGT Re FOAK	tro Post	Gas - Co	CS CCGT Pr	e FOAK	Gas - Co	CS CCGT or	ку ГОАК
Reference plant size	MW		963			618			1,084			1,038	
Average load factor	%		88%			88%			88%			88%	
(net of availability)													
Efficiency (HHV)	%		44%			44%			38%			42%	
Pre-development period	Duration and % spend per years 1 & 2	5 years	20%	20%	4 years	25%	25%	5 years	20%	20%	6 years	16.7%	16.7%
	% spend per years 3, 4, & 5	20%	20%	20%	25%	25%		20%	20%	20%	16.7%	16.7%	16.7%
	% spend per years 6, 7, & 8										16.7%		
Construction period	Duration and % spend per years 1 & 2	5 years	20%	20%	4 years	25%	25%	5 years	20%	20%	5 years	20%	20%
	% spend per years 3, 4, & 5	20%	20%	20%	25%	25%		20%	20%	20%	20%	20%	20%
	% spend per years 6, 7, & 8												
Operating period	Duration	25 years			25 years			25 years			25 years		
		Commissioning year 2018 2020 2025			Com	missioning	year	Com	missioning	year	Com	missioning	year
		2018	2020	2025	2018	2020	2025	2018	2020	2025	2018	2020	2025
Pre-development	High	-	-	80	-	-	50	-	-	80	-	-	80
£/kW	Medium	-	-	50	-	-	30	-	-	50	-	-	40
	Low	-	-	30	-	-	20	1	1	30	-	-	30
Construction	High	-	-	2,700	-	-	1,800	-	-	2,600	-	-	2,700
£/kW	Medium	-	-	2,100	-	-	1,400	1	-	2,000	-	-	2,100
	Low	-	-	1,700	-	-	1,200	-	-	1,700	-	-	1,700
Infrastructure	High	-	-	30,200	-	-	-	-	-	30,200	-	-	30,200
£'000s	Medium	-	-	15,100	-	-	-	-	-	15,100	-	-	15,100
	Low	-	-	7,600	-	-	-	-	-	7,600	-	-	7,600
Fixed O&M	Medium	-	-	31,000	-	-	30,900	-	-	30,500	-	-	83,800
£/MW/year													
Variable O&M	Medium	-	-	3	-	-	3	-	-	4	-	-	4
£/MWh													
Insurance	Medium	-	-	7,300	-	-	7,400	-	-	7,500	-	-	7,500
£/MWh/year													
Connection and Use of System	Medium	-	-	3,300	-	-	3,300	-	-	3,300	-	-	3,300
charges £/MW/year													

		Gas - CO	CS OCGT po	st FOAK	Coal - CO	CS ASC Part	tial FOAK	Coal	- CCS ASC	FOAK	Coal - CC	S ASC retro	ofit FOAK
Reference plant size	MW		290			734			624			390	
Average load factor	%		85%			91%			91%			91%	
(net of availability)													
Efficiency (HHV)	%		24%			38%			32%			31%	
Pre-development period	Duration and % spend per years 1 & 2	5 years	20%	20%	5 years	20%	20%	5 years	20%	20%	5 years	20%	20%
	% spend per years 3, 4, & 5	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
	% spend per years 6, 7, & 8												
Construction period	Duration and % spend per years 1 & 2	5 years	20%	20%	5 years	20%	20%	5 years	20%	20%	4 years	25%	25%
	% spend per years 3, 4, & 5	20%	20%	20%	20%	20%	20%	20%	20%	20%	25%	25%	
	% spend per years 6, 7, & 8												
Operating period	Duration	25 years			25 years			25 years			15 years		
		Commissioning year 2018 2020 2025			Com	missioning	year	Com	missioning	year	Com	missioning	year
		2018	2020	2025	2018	2020	2025	2018	2020	2025	2018	2020	2025
Pre-development	High	-	-	120	-	-	80	-	-	110	-	-	50
£/kW	Medium	-	-	80	-	-	60	-	-	70	-	-	30
	Low	-	-	60	-	-	40	1	1	60	-	-	20
Construction	High	-	-	3,000	-	-	3,400	1	-	5,500	-	-	3,000
£/kW	Medium	-	-	2,300	-	-	2,600	1	-	4,200	-	-	2,400
	Low	-	-	1,900	-	-	2,100	1	-	3,400	-	-	1,900
Infrastructure	High	-	-	30,200	-	-	15,000	-	-	15,000	-	-	-
£'000s	Medium	-	-	15,100	-	-	10,000	-	-	10,000	-	-	-
	Low	-	-	7,600	-	-	5,000	-	-	5,000	-	-	-
Fixed O&M	Medium	-	-	31,800	-	-	56,400	-	-	78,500	-	-	80,700
£/MW/year													
Variable O&M	Medium	-	-	3	-	-	3	-	-	3	-	-	3
£/MWh													
Insurance	Medium	-	-	8,500	-	-	9,600	-	-	15,800	-	-	8,200
£/MWh/year													
Connection and Use of System	Medium	-	-	2,500	-	-	3,800	-	-	3,800	-	-	3,800
charges £/MW/year													

		Coal - 0	CCS ASC Ox	y FOAK	Coal - C	CCS ASC NH	ІЗ ГОАК	Coal -	- CCS IGCC	FOAK	Coal - CC	S IGCC pai	tial FOAK
Reference plant size	MW		552			624			652			760	
Average load factor (net of availability)	%		91%			91%			88%			88%	
Efficiency (HHV)	%		32%			32%			30%			35%	
Pre-development period	Duration and % spend per years 1 & 2	6 years	16.7%	16.7%	5 years	20%	20%	5 years	20%	20%	5 years	20%	20%
	% spend per years 3, 4, & 5	16.7%	16.7%	16.7%	20%	20%	20%	20%	20%	20%	20%	20%	20%
	% spend per years 6, 7, & 8	16.7%											
Construction period	Duration and % spend per years 1 & 2	6 years	18.2%	18.2%	5 years	20%	20%	5 years	20%	20%	5 years	20%	20%
	% spend per years 3, 4, & 5	18.2%	18.2%	18.2%	20%	20%	20%	20%	20%	20%	20%	20%	20%
	% spend per years 6, 7, & 8	9.1%											
Operating period	Duration	25 years			25 years			25 years			25 years		
		Commissioning year			Com	missioning	year	Com	missioning	year	Com	missioning	year
		2018	2020	2025	2018	2020	2025	2018	2020	2025	2018	2020	2025
Pre-development	High	-	-	80	-	-	110	-	-	80	-	-	60
£/kW	Medium	-	-	40	-	-	70	-	-	60	-	-	40
	Low	-	-	30	-	-	60	-	-	50	-	-	40
Construction	High	-	-	4,400	-	-	5,500	1	-	5,000	-	-	3,600
£/kW	Medium	-	-	3,400	-	-	4,200	1	-	3,900	-	-	2,800
	Low	-	-	2,900	-	-	3,400	-	-	3,300	-	-	2,400
Infrastructure	High	-	-	15,000	-	-	15,000	-	-	15,000	-	-	15,000
£'000s	Medium	-	-	10,000	-	-	10,000	-	-	10,000	-	-	10,000
	Low	-	-	5,000	-	-	5,000	-	-	5,000	-	-	5,000
Fixed O&M	Medium	-	-	68,200	-	-	79,600	-	-	65,300	-	-	52,100
£/MW/year													
Variable O&M	Medium	-	-	6	-	-	3	-	-	5	-	-	5
£/MWh													
Insurance	Medium	-	-	13,000	-	-	19,300	-	-	22,700	-	-	14,000
£/MWh/year			<u> </u>										
Connection and Use of System charges £/MW/year	Medium	-	-	3,800	-	-	3,800	-	-	3,800	-	-	3,800

		Coal - Co	CS IGCC ret	ro FOAK
Reference plant size	MW		622	
Average load factor	%		88%	
(net of availability)				
Efficiency (HHV)	%		27%	
Pre-development period	Duration and % spend per years 1 & 2	5 years	20%	20%
	% spend per years 3, 4, & 5	20%	20%	20%
	% spend per years 6, 7, & 8			
Construction period	Duration and % spend per years 1 & 2	4 years	25%	25%
	% spend per years 3, 4, & 5	25%	25%	
	% spend per years 6, 7, & 8			
Operating period	Duration	25 years		
		Com	missioning	year
		2018	2020	2025
Pre-development	High	-	-	100
£/kW	Medium	-	-	60
	Low	-	-	60
Construction	High	-	-	5,400
£/kW	Medium	-	-	4,200
	Low	-	-	3,600
Infrastructure	High	-	-	-
£'000s	Medium	-	-	-
	Low	-	-	-
Fixed O&M	Medium	-	-	81,900
£/MW/year				
Variable O&M	Medium	-	-	6
£/MWh				
Insurance	Medium	-	-	27,600
£/MWh/year				
Connection and Use of System charges £/MW/year	Medium	-	-	3,800

		Ded	icated Bion	nass	C	Conversion	s	В	iomass CH	Р	Ons	hore UK>5	MW
Reference plant size	MW		23			349			14			20	
Average load factor	%		84%			79%			80%			32%	
(net of availability)													
Efficiency (LHV)	%		29%			40%			23%			0%	
Pre-development period	Duration and % spend per years 1 & 2	3 years	33.3%	33.3%	2 years	50%	50%	3 years	33.3%	33.3%	4 years	25%	25%
	% spend per years 3, 4, & 5	33.3%						33.3%			25%	25%	
	% spend per years 6, 7, & 8												
Construction period	Duration and % spend per years 1 & 2	2 years	50%	50%	2 years	43.5%	43.5%	2 years	50%	50%	2 years	50%	50%
	% spend per years 3, 4, & 5				13%								
	% spend per years 6, 7, & 8												
Operating period	Duration	25 years			15 years			24 years			24 years		
		Com	missioning	year	Com	missioning	year	Com	missioning	year	Com	missioning	year
		2018	2020	2025	2018	2020	2025	2018	2020	2025	2018	2020	2025
Pre-development	High	160	160	160	120	120	-	580	580	580	190	190	190
£/kW	Medium	110	110	110	80	80	-	270	270	270	110	110	110
	Low	80	80	80	50	50	-	40	40	40	40	40	40
Construction	High	3,400	3,300	3,300	300	300	-	5,400	5,600	5,900	1,500	1,500	1,400
£/kW	Medium	2,900	2,900	2,800	200	200	-	4,500	4,700	4,900	1,200	1,200	1,200
	Low	2,400	2,300	2,300	200	200	-	3,400	3,500	3,700	900	800	800
Infrastructure	High	500	500	500	-	-	-	1,100	1,100	1,100	4,100	4,100	4,100
£'000s	Medium	400	400	400	-	-	-	900	900	900	3,300	3,300	3,300
	Low	200	200	200	-	-	-	700	700	700	2,300	2,300	2,300
Fixed O&M	Medium	65,500	65,500	65,500	22,800	22,800	-	223,500	230,000	240,600	23,200	23,000	22,400
£/MW/year													
Variable O&M	Medium	8	8	8	1	1	-	11	11	11	5	5	5
£/MWh													
Insurance	Medium	11,500	11,500	11,500	11,500	11,500	-	44,000	45,300	47,400	1,400	1,400	1,400
£/MWh/year													
Connection and Use of System charges £/MW/year	Medium	12,900	12,900	12,900	10,500	10,500	-	15,500	16,000	16,700	3,100	3,100	3,000

Note: The load factor provided above for onshore wind is for plants commissioning from 2020 comissioning onwards. Different load factors apply to the pre 2020 levelised costs results presented in this report (refer to the underlying Arup report for this information).

		(Offshore R2	2	(Offshore R3	3		PV>5MW		PV 1	L-5MW gro	und
Reference plant size	MW		321			844			16			4	
Average load factor (net of availability)	%		43%			48%			11%			11%	
Efficiency (LHV)	%		0%			0%			0%			0%	
Pre-development period	Duration and % spend per years 1 & 2	5 years	22.2%	22.2%	5 years	22.2%	22.2%	1 years	100%		1 years	100%	
	% spend per years 3, 4, & 5	22.2%	22.2%	11.1%	22.2%	22.2%	11.1%						
	% spend per years 6, 7, & 8												
Construction period	Duration and % spend per years 1 & 2	3 years	33.3%	33.3%	3 years	33.3%	33.3%	0 years	100%		0 years	100%	
	% spend per years 3, 4, & 5	33.3%			33.3%								
	% spend per years 6, 7, & 8												
Operating period	Duration	23 years			22 years			25 years			25 years		
		Com	Com	missioning	year	Comi	missioning	year	Com	missioning	year		
		2018	2020	2025	2018	2020	2025	2018	2020	2025	2018	2020	2025
Pre-development	High	150	150	150	190	190	190	170	170	170	60	60	60
£/kW	Medium	60	60	60	120	120	120	70	70	70	60	60	60
	Low	20	20	20	60	60	60	10	10	10	60	60	60
Construction	High	3,100	3,000	2,700	2,700	2,600	2,400	700	700	600	900	800	700
£/kW	Medium	2,200	2,100	1,900	2,400	2,300	2,100	700	600	600	700	700	600
	Low	1,700	1,600	1,500	2,100	2,000	1,800	600	600	500	600	600	500
Infrastructure	High	97,400	97,400	97,400	372,400	372,400	372,400	400	400	400	300	300	300
£'000s	Medium	69,300	69,300	69,300	323,000	323,000	323,000	400	400	400	200	200	200
	Low	53,000	53,000	53,000	281,400	281,400	281,400	400	400	400	200	200	200
Fixed O&M	Medium	30,900	30,000	28,600	48,600	47,300	45,400	5,600	5,400	5,100	8,300	8,000	7,500
£/MW/year													
Variable O&M	Medium	3	3	3	4	3	3	-	-	-	-	-	-
£/MWh													
Insurance	Medium	1,400	1,400	1,300	3,300	3,300	3,100	2,000	1,900	1,800	1,200	1,100	1,100
£/MWh/year													
Connection and Use of System	Medium	33,500	32,600	31,100	50,300	48,900	47,000	1,300	1,300	1,200	1,300	1,300	1,200
charges £/MW/year													

Note: The load factor provided above for offshore wind round 2 and 3 is for plants commissioning from 2020 comissioning onwards. Different load factors apply to the pre 2020 levelised costs results presented in this report (refer to the underlying Arup report for this information).

		PV 1	L-5MW buil	ding		EfW			EfW CHP			AD	
Reference plant size	MW		1			30			24			2	-
Average load factor	%		11%			81%			81%			79%	
(net of availability)													
Efficiency (LHV)	%		0%			28%			22%			40%	
Pre-development period	Duration and % spend per years 1 & 2	1 years	100%		4 years	22.8%	22.8%	4 years	22.8%	22.8%	2 years	66.7%	33.3%
	% spend per years 3, 4, & 5				22.8%	22.8%	9%	22.8%	22.8%	9%			
	% spend per years 6, 7, & 8												
Construction period	Duration and % spend per years 1 & 2	0 years	100%		3 years	33.3%	33.3%	3 years	33.3%	33.3%	1 years	100%	
	% spend per years 3, 4, & 5				33.3%			33.3%					
	% spend per years 6, 7, & 8												
Operating period	Duration	25 years			35 years			35 years			20 years		
		Commissioning year 2018 2020 2025			Com	missioning	year	Com	missioning	year	Com	missioning	year
		2018	2020	2025	2018	2020	2025	2018	2020	2025	2018	2020	2025
Pre-development	High	20	20	20	390	390	390	300	300	300	440	440	440
£/kW	Medium	20	20	20	230	230	230	210	210	210	340	340	340
	Low	20	20	20	110	110	110	130	130	130	260	260	260
Construction	High	800	800	700	12,500	12,400	12,200	15,900	15,800	15,600	4,900	4,900	4,900
£/kW	Medium	700	700	600	8,200	8,100	8,000	13,300	13,200	13,000	3,700	3,700	3,700
	Low	700	600	600	4,600	4,600	4,500	10,300	10,300	10,100	2,900	2,900	2,900
Infrastructure	High	-	-	-	6,600	6,600	6,600	8,500	8,500	8,500	1,000	1,000	1,000
£'000s	Medium	-	-	-	4,600	4,600	4,600	5,900	5,900	5,900	700	700	700
	Low	-	-	-	2,500	2,500	2,500	3,000	3,000	3,000	500	500	500
Fixed O&M	Medium	6,600	6,300	5,900	139,500	137,900	134,800	153,000	151,300	147,900	78,100	78,100	78,100
£/MW/year													
Variable O&M	Medium	3	3	3	25	25	24	55	55	53	81	81	81
£/MWh													
Insurance	Medium	2,600	2,600	2,400	30,500	30,100	29,500	85,200	84,300	82,400	54,200	54,200	54,200
£/MWh/year													
Connection and Use of System	Medium	1,300	1,300	1,200	16,700	16,500	16,100	16,700	16,500	16,100	12,900	12,900	12,900
charges £/MW/year													

		AD CHP		ACT Standard			ACT Advanced			ACT CHP				
Reference plant size	MW	2		12			9			1				
Average load factor	%	79%		83%			83%			83%				
(net of availability)														
Efficiency (LHV)	%		32%			21%			25%			24%		
Pre-development period	Duration and % spend per years 1 & 2	2 years	66.7%	33.3%	3 years	36.4%	36.4%	3 years	36.4%	36.4%	3 years	36.4%	36.4%	
	% spend per years 3, 4, & 5				27.3%			27.3%			27.3%			
	% spend per years 6, 7, & 8													
Construction period	Duration and % spend per years 1 & 2	1 years	100%		2 years	50%	50%	2 years	44.4%	44.4%	2 years	44.4%	44.4%	
	% spend per years 3, 4, & 5							11.1%			11.1%			
	% spend per years 6, 7, & 8													
Operating period	Duration	20 years			25 years			25 years			25 years			
		Com	missioning	year	Commissioning year			Commissioning year			Commissioning year			
		2018	2020	2025	2018	2020	2025	2018	2020	2025	2018	2020	2025	
Pre-development	High	440	440	440	300	300	300	980	980	980	980	980	980	
£/kW	Medium	340	340	340	180	180	180	410	410	410	410	410	410	
	Low	260	260	260	50	50	50	90	90	90	90	90	90	
Construction	High	5,600	5,600	5,600	7,100	6,900	6,600	12,300	12,000	11,400	16,700	16,300	15,400	
£/kW	Medium	4,300	4,300	4,300	6,100	6,000	5,600	7,100	7,000	6,600	9,000	8,800	8,300	
	Low	3,300	3,300	3,300	4,200	4,100	3,900	4,300	4,200	4,000	4,900	4,800	4,500	
Infrastructure	High	1,000	1,000	1,000	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	
£'000s	Medium	700	700	700	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	
	Low	500	500	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	
Fixed O&M	Medium	132,000	132,000	132,000	232,400	229,700	223,200	157,700	156,000	151,600	157,700	156,000	151,600	
£/MW/year														
Variable O&M	Medium	81	81	81	21	21	20	40	39	38	40	39	38	
£/MWh														
Insurance	Medium	54,200	54,200	54,200	56,700	56,000	54,400	83,300	82,400	80,100	83,300	82,400	80,100	
£/MWh/year														
Connection and Use of System	Medium	12,900	12,900	12,900	12,700	12,600	12,200	12,700	12,600	12,200	12,700	12,600	12,200	
charges £/MW/year														

		Landfill gas			Sewage gas			Geothermal CHP			Hydro Large Store			
Reference plant size	MW	2		3			3			11				
Average load factor	%		58%		46%			90%			45%			
(net of availability)														
Efficiency (LHV)	%		100%			100%			100%			100%		
Pre-development period	Duration and % spend per years 1 & 2	1 years	100%		1 years	100%		1 years	100%		0 years	70%	30%	
	% spend per years 3, 4, & 5													
	% spend per years 6, 7, & 8													
Construction period	Duration and % spend per years 1 & 2	0 years	100%		2 years	56%	44%	3 years	33.3%	33.3%	2 years	70%	30%	
	% spend per years 3, 4, & 5							33.3%						
	% spend per years 6, 7, & 8													
Operating period	Duration	27.85714	28571429 y	ears	20 years			25 years			41 years			
		Commissioning year			Commissioning year			Commissioning year			Commissioning year			
		2018	2020	2025	2018	2020	2025	2018	2020	2025	2018	2020	2025	
Pre-development	High	60	60	60	420	420	420	130	130	130	-	-	-	
£/kW	Medium	40	40	40	420	420	420	110	110	110	60	60	60	
	Low	20	20	20	410	410	410	80	80	80	-	-	-	
Construction	High	3,600	3,600	3,600	7,000	7,000	7,000	9,400	9,300	9,100	-	-	-	
£/kW	Medium	2,200	2,200	2,200	5,100	5,100	5,100	6,900	6,800	6,700	3,200	3,200	3,200	
	Low	800	800	800	1,800	1,800	1,800	3,000	3,000	2,900	-	-	-	
Infrastructure	High	1,000	1,000	1,000	200	200	200	500	500	500	-	-	-	
£'000s	Medium	700	700	700	200	200	200	300	300	300	-	-	-	
	Low	500	500	500	100	100	100	200	200	200	-	-	-	
Fixed O&M	Medium	81,000	81,000	81,000	48,600	48,600	48,600	81,000	81,000	81,000	25,700	25,700	25,700	
£/MW/year														
Variable O&M	Medium	9	9	9	12	12	12	12	12	12	6	6	6	
£/MWh														
Insurance	Medium	1,600	1,600	1,600	36,600	36,600	36,600	1,600	1,600	1,600	1,000	1,000	1,000	
£/MWh/year														
Connection and Use of System	Medium	6,500	6,500	6,500	12,900	12,900	12,900	12,900	12,900	12,900	7,600	7,600	7,600	
charges £/MW/year														

		Ну	/dro 5-16M	IW		Wave		Tidal stream				
Reference plant size	MW		11		9			18				
Average load factor (net of availability)	%		35%			30%			31%			
Efficiency (LHV)	%		100%			100%			100%			
Pre-development period	Duration and % spend per years 1 & 2	2 years	77%	23%	3 years	33.3%	33.3%	4 years	23.3%	23.3%		
	% spend per years 3, 4, & 5				33.3%			23.3%	23.3%	7%		
	% spend per years 6, 7, & 8											
Construction period	Duration and % spend per years 1 & 2	2 years	70%	30%	2 years	50%	50%	2 years	55.5%	44.5%		
	% spend per years 3, 4, & 5											
	% spend per years 6, 7, & 8											
Operating period	Duration	41 years			20 years			22 years				
		Com	Commissioning year			Commissioning year			Commissioning year			
		2018	2020	2025	2018	2020	2025	2018	2020	2025		
Pre-development	High	300	300	300	-	-	270	-	-	270		
£/kW	Medium	60	60	60	-	-	130	-	-	130		
_,	Low	40	40	40	-	-	40	-	-	40		
Construction	High	3,100	3,100	3,100	-	-	6,200	-	-	6,000		
£/kW	Medium	3,000	3,000	3,000	-	-	4,500	-	-	4,200		
	Low	1,600	1,600	1,600	-	-	2,600	-	-	2,400		
Infrastructure	High	-	-	-	-	-	7,000	-	-	10,500		
£'000s	Medium	-	-	-	-	-	5,100	-	-	7,400		
	Low	-	-	-	-	-	2,900	-	-	4,200		
Fixed O&M	Medium	45,100	45,100	45,100	-	-	40,600	-	-	91,400		
£/MW/year												
Variable O&M	Medium	6	6	6	-	-	24	-	-	7		
£/MWh												
Insurance	Medium	-	-	-	-	-	11,900	-	-	2,500		
£/MWh/year		<u> </u>										
Connection and Use of System charges £/MW/year	Medium	-	-	-	-	-	32,300	-	-	60,400		

		Solar 100-1000kW			Solar <10kW			Onshore <50kW			Onshore 250-1000kW			
Reference plant size	MW		0.455		0.003			0.010			0.482			
Average load factor	%		11%		11%			21%			26%			
(net of availability)														
Efficiency (LHV)	%		100%		100%			100%			100%			
Pre-development period	Duration and % spend per years 1 & 2	0 years			0 years			0 years			0 years			
	% spend per years 3, 4, & 5													
	% spend per years 6, 7, & 8													
Construction period	Duration and % spend per years 1 & 2	0 years	100%		0 years	100%		0 years	100%		0 years	100%		
	% spend per years 3, 4, & 5													
	% spend per years 6, 7, & 8													
Operating period	Duration	30 years			30 years			20 years			20 years			
		Commissioning year			Commissioning year			Commissioning year			Commissioning year			
		2018	2020	2025	2018	2020	2025	2018	2020	2025	2018	2020	2025	
Pre-development	High	-	-	-	-	-	-	-	-	-	-	-	-	
£/kW	Medium	-	-	-	-	-	-	-	-	-	-	-	-	
	Low	-	-	-	-	-	-	-	-	-	-	-	-	
Construction	High	1,300	1,200	1,200	1,900	1,800	1,700	4,600	4,500	4,300	2,700	2,700	2,500	
£/kW	Medium	1,000	1,000	900	1,500	1,500	1,400	3,700	3,600	3,500	2,200	2,100	2,000	
	Low	800	800	700	1,200	1,100	1,000	2,800	2,800	2,600	1,700	1,600	1,500	
Infrastructure	High	200	200	200	-	-	-	-	-	-	200	200	200	
£'000s	Medium	200	200	200	-	-	-	-	-	-	200	200	200	
	Low	200	200	200	-	-	-	-	-	-	200	200	200	
Fixed O&M	Medium	9,400	9,400	9,200	23,500	23,400	23,200	29,700	29,600	29,600	56,900	56,900	56,700	
£/MW/year														
Variable O&M	Medium	-	-	-	-	-	-	-	-	-	-	-	-	
£/MWh														
Insurance	Medium	-	-	-	-	-		-	-	-	-	-	-	
£/MWh/year														
Connection and Use of System	Medium	-	-	-	-	-	1	-	-	-	-	-	-	
charges £/MW/year														

		-	AD < 250kV	V	Hydro	opower <10	00kW	Hydropower 500-2000kW			
Reference plant size	MW		0.155			0.033			1.046		
Average load factor	%		65%			60%			40%		
(net of availability)											
Efficiency (LHV)	%		38%			100%		100%			
Pre-development period	Duration and % spend per years 1 & 2	0 years			0 years			0 years			
	% spend per years 3, 4, & 5										
	% spend per years 6, 7, & 8										
Construction period	Duration and % spend per years 1 & 2	0 years	100%		0 years	100%		0 years	100%		
	% spend per years 3, 4, & 5										
	% spend per years 6, 7, & 8										
Operating period	Duration	20 years			35 years			35 years			
		Commissioning year			Com	missioning	year	Commissioning year			
		2018	2020	2025	2018	2020	2025	2018	2020	2025	
Pre-development	High	-	-	-	-	-	-	-	-	-	
£/kW	Medium	-	-	-	-	-	-	-	-	-	
	Low	-	-	-	-	-	-	-	-	-	
Construction	High	7,900	7,700	7,300	7,800	7,800	7,800	4,100	4,100	4,100	
£/kW	Medium	5,800	5,700	5,400	6,300	6,300	6,300	3,300	3,300	3,300	
	Low	3,700	3,600	3,400	4,800	4,800	4,800	2,500	2,500	2,500	
Infrastructure	High	100	100	100	-	-	-	400	400	400	
£'000s	Medium	100	100	100	-	-	-	400	400	400	
	Low	100	100	100	-	-	-	400	400	400	
Fixed O&M	Medium	758,700	758,700	758,700	83,300	83,300	83,300	18,200	18,200	18,200	
£/MW/year											
Variable O&M	Medium	-	-	-	-	-	-	-	-	-	
£/MWh											
Insurance	Medium	-	-	-	-	-	-	-	-	-	
£/MWh/year											
Connection and Use of System charges £/MW/year	Medium	-	-	-	-	-	-	-	-	-	