

# SOLAR AGRICULTURE FUND

A Sukuk-backed fund to foster agricultural development in West Africa through sustainable energy production

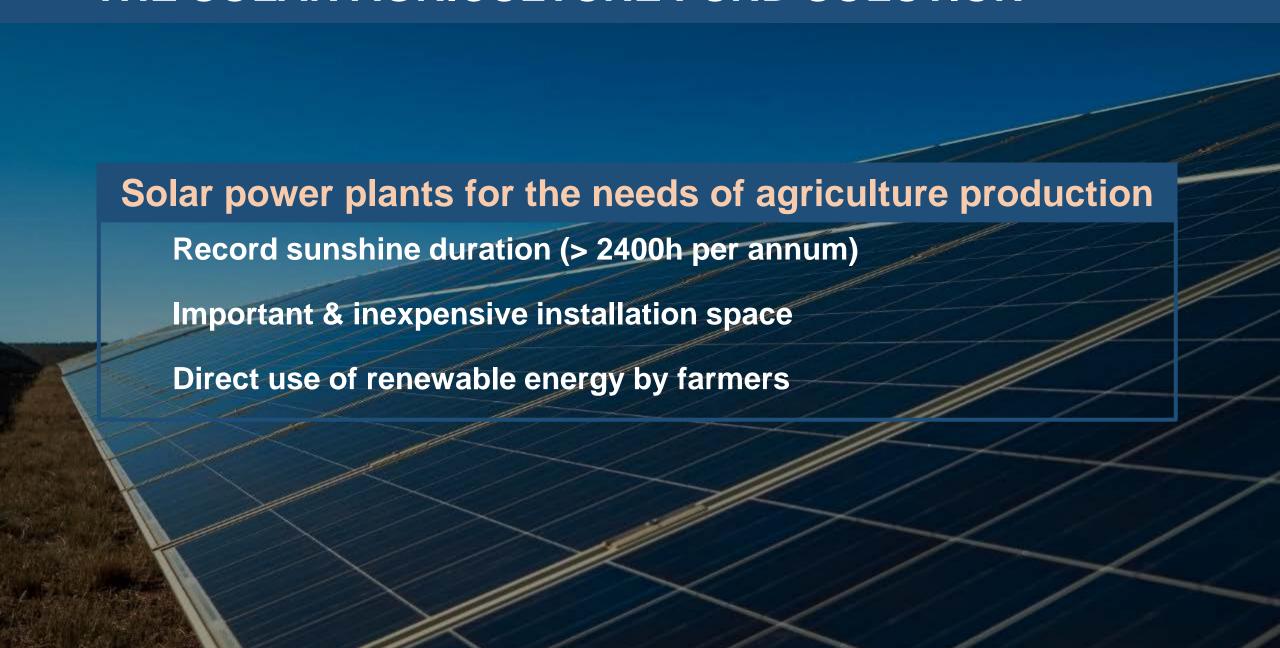
#### FOOD SCARCITY IN SUB-SAHARAN AFRICA



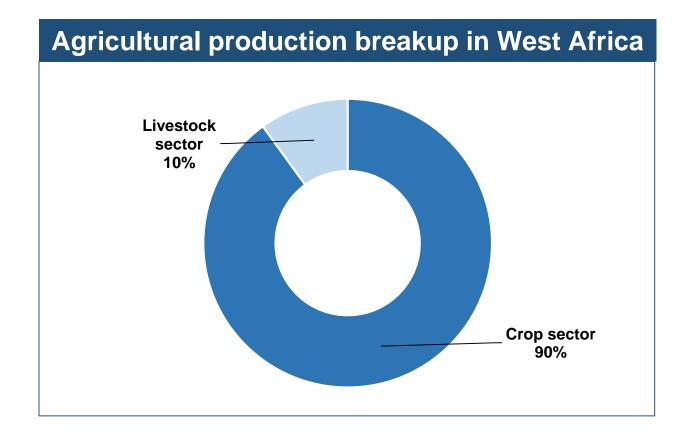
### LACK OF AGRICULTURAL PRODUCTIVITY



### THE SOLAR AGRICULTURE FUND SOLUTION

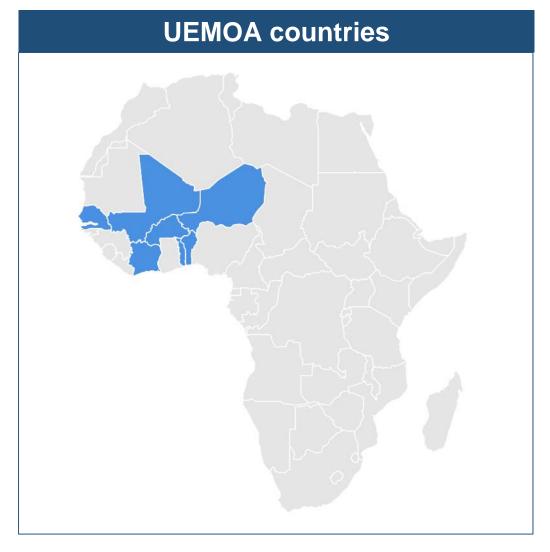


#### **GEOGRAPHICAL TARGET**



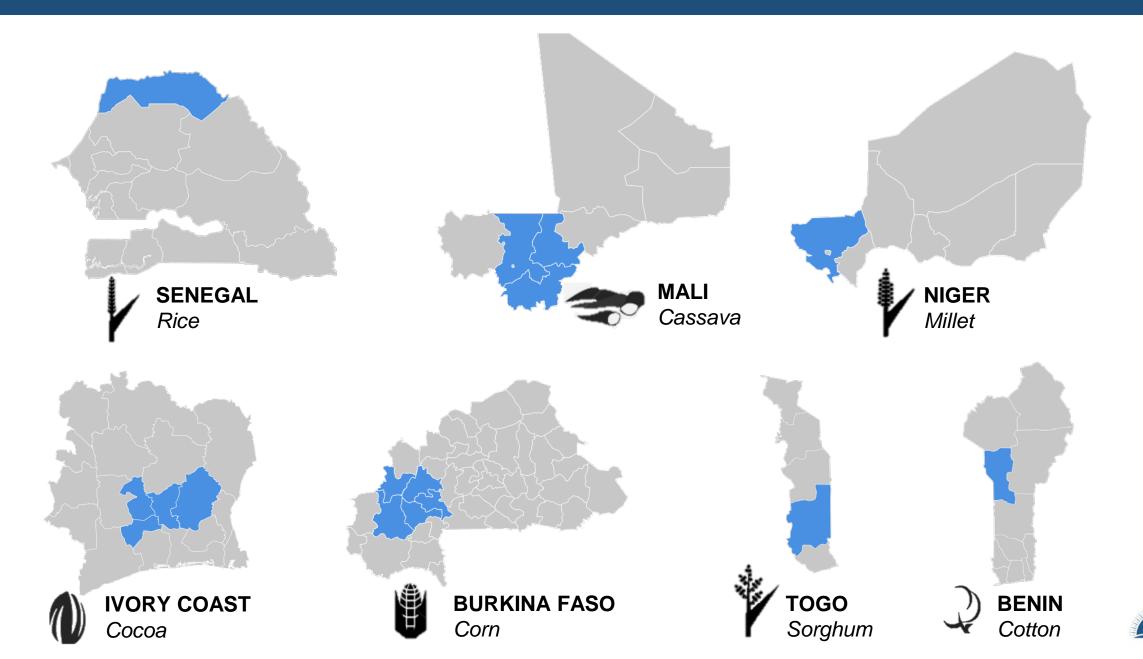
**Average solar irradiation in West Africa** 

2,190 kWh / sq m / annum

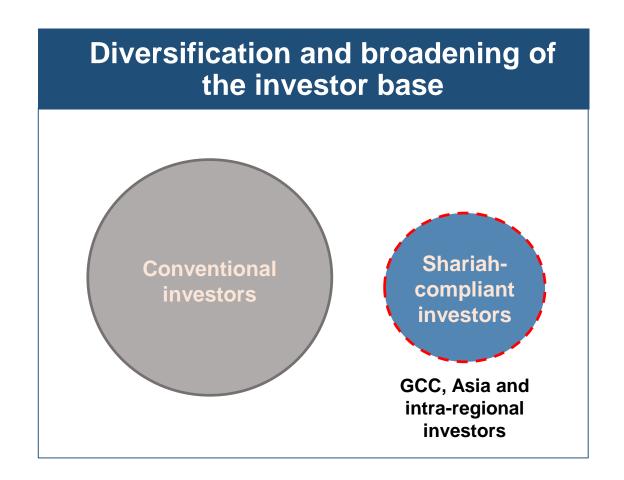


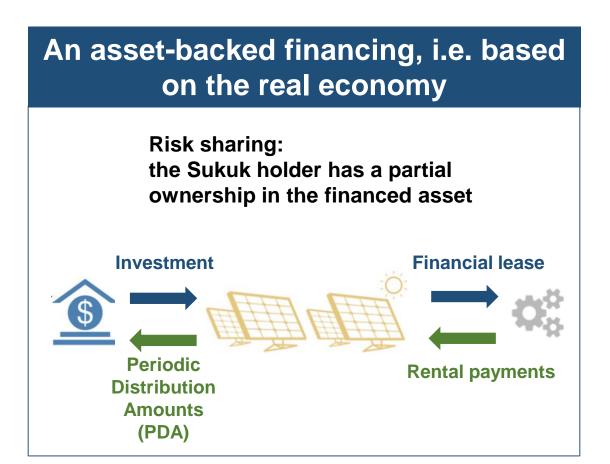


### **COUNTRY MIX**



#### **ISSUANCE OF A SUKUK AL IJARA**

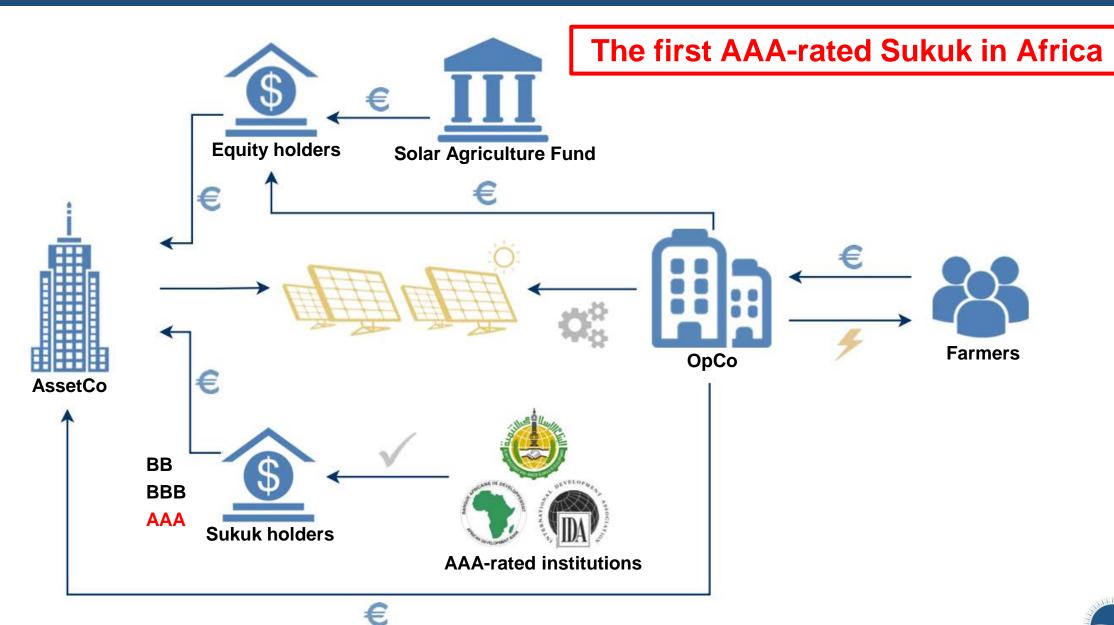




Muslims represent 68% of the West African population



### **FUND STRUCTURE**





### **IMPLEMENTATION PROCESS**

	STEP	PARTNER	DETAILS
CON	Identification of target lands and potential consumers	WAAPP/PPAAO UEMOA	Target: flat land, proximity to local farms and storage warehouses with low or no access to electricity
COI	Legal due dilligence and advisory  Services	McDermott Will&Emery	Review of the legal issues, tax issues and regulatory practice in UEMOA countries for the SPV formation
IN PR	Engagement with LPs	ASPICAN DESCRIPTION BANK APOLIE	Negotiations with the IDB, the ADB and institutional investors
	RPS: selection of lead managers and bookrunners for the Sukuk	eurisgroup  eghio	Structuring of the Sukuk al Ijara, rating, roadshow for prospective Sukuk investors and issuance
	PPA negotiation		Critical to determine rental payments to the AssetCo
	Acquisition of the PV panels	JinKO Solar	Supplier selected after due dilligence
	Installation of the PV systems	enerdeal smart energy today  DEM  GROUP	Length: 3 months for a 5MW utility-scale farm
2	Maintenance operations		Training of the local labor
	Donation of the PV systems at maturity		Target: local farmers

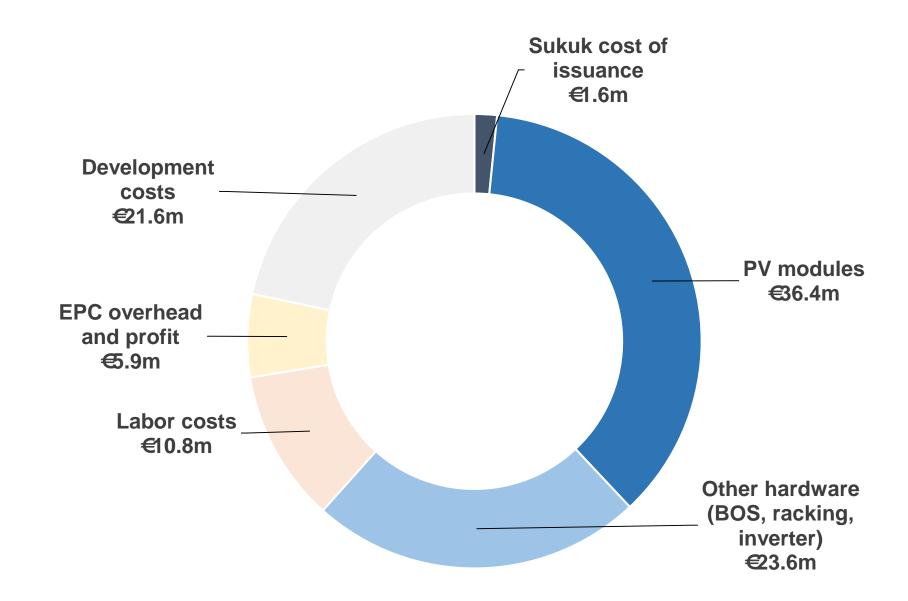
### **FUND OVERVIEW**

Solar Agriculture Fund profile								
Fund size	€100m							
Target investment	Target investment 56MW across 7 countries: ~40 hectares of PV panels							
Management fees	1%	1%						
Carried interest	Max(0%, Min(Realized Equity IRR, 30%) – Target Equity IRR)							
Fund structure	Tranche size	Target IRR*	Maturity					
AAA-rated Sukuk	€68m	1.0 - 1.5%	8 years					
BBB-rated Sukuk	€m	3.0 - 3.5 %	9 years					
BB-rated Sukuk	€4m	6.5 - 7.0 %	10 years					
Equity	€20m	10.5 - 13.0 %	20 years					

<sup>\*</sup> Based on a €0.21/kWh average PPA and a total 90.5GWh production per annum

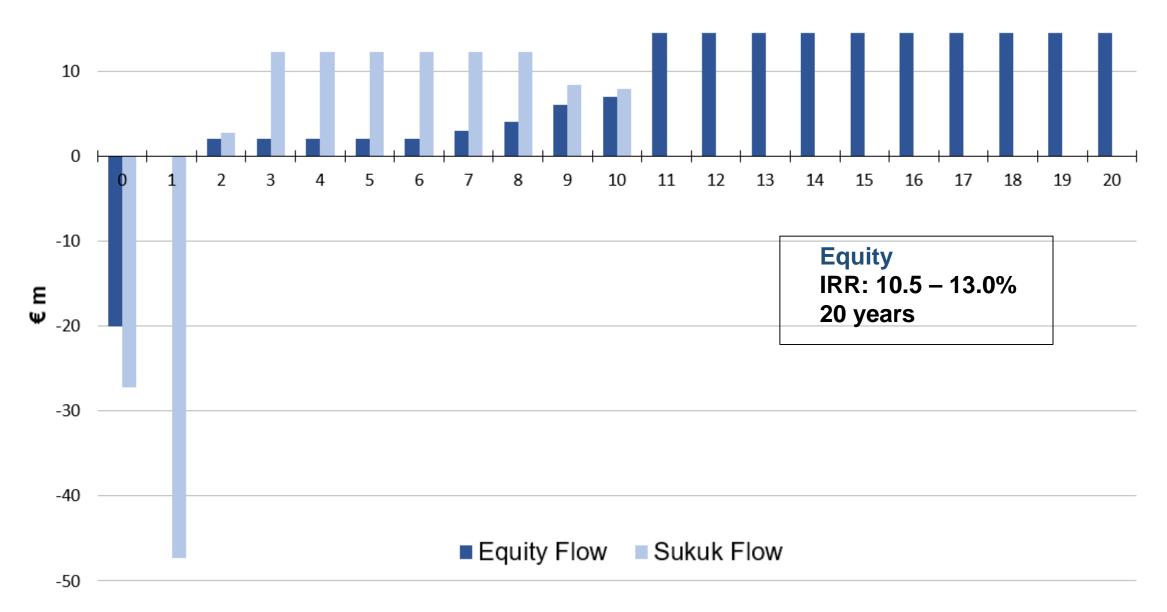


### **FUNDS ALLOCATION**



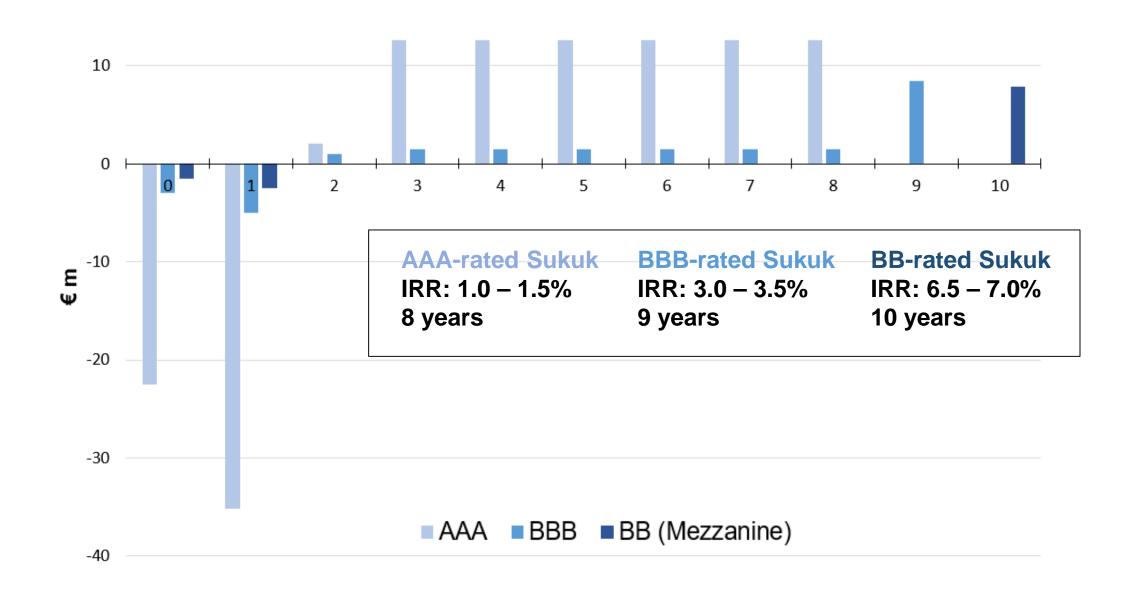


#### **CASH FLOWS FOR INVESTORS**





#### CASH FLOWS FOR SUKUK HOLDERS





### IMPACTS MEASUREMENTS



#### **Economic Impacts**

Enhanced agricultural productivity by 2% over the investment-period

Job creation in rural areas
Stimulated consumption and economic activity



#### **Social Impacts**



Stabilized food prices

Increased purchasing power and well-being for 32,000 beneficiaries

Food security

Improved farmers' working conditions



#### **Environmental Impacts**

Better use of water

Clean energy production (27% decrease in CO<sub>2</sub> emissions)



#### **ACKNOWLEDGEMENTS**





















ARDIAN

J.P.Morgan



### SOLAR AGRICULTURE FUND TEAM







**Aldric Ogle** 



**Amine Mansouri** 



Nahim Bapikee

#### A strong team of advisors

#### **Finance and Investing experience**











**DUET**|TAUD

#### **Africa-related experience**





#### **Islamic Finance experience**

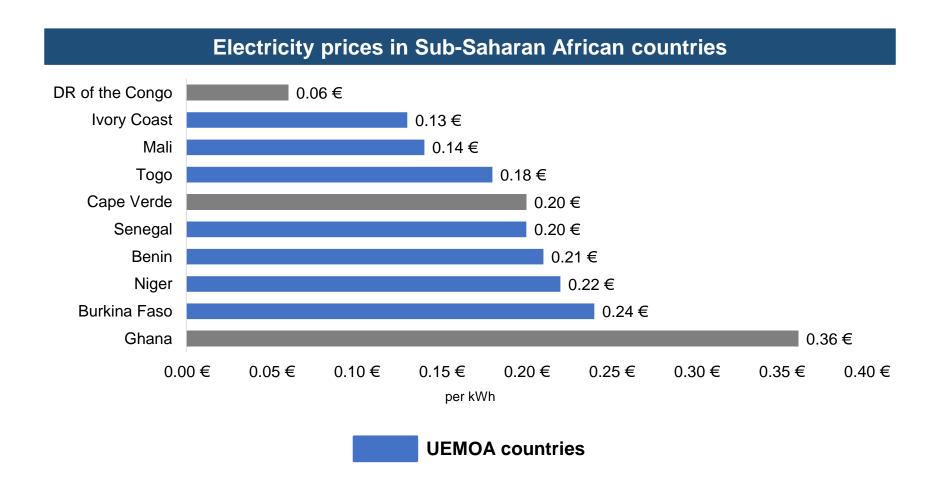






## APPENDIX

#### PPA PRICE DETERMINATION





#### SENSITIVITY ANALYSIS

#### Sensitivity Table: Equity IRR

Sale price €0.17 €0.18 €0.19 €0.20 €0.21 €0.22 €0.23 €0.24 €0.25

ä.	75 GWh	7.24%	7.95%	8.58%	9.15%	9.67%	10.14%	10.58%	10.99%	11.37%
	80 GWh	8.04%	8.70%	9.29%	9.83%	10.32%	10.77%	11.20%	11.59%	11.96%
n p.a.	85 GWh	8.74%	9.36%	9.92%	10.44%	10.91%	11.35%	11.75%	12.13%	12.49%
roduction	90 GWh	9.36%	9.96%	10.5%	10.99%	11.44%	11.87%	12.26%	12.63%	12.98%
Pro	95 GWh	9.92%	10.5%	11.02%	11.49%	11.93%	12.34%	12.73%	13.09%	13.43%
	100 GWh	10.44%	10.99%	11.49%	11.96%	12.39%	12.79%	13.16%	13.51%	13.85%
	105 GWh	10.91%	11.44%	11.93%	12.39%	12.81%	13.2%	13.57%	13.91%	14.24%

#### Sensitivity Table: BBB-rated Sukuk IRR Sale price

€0.17 €0.18 €0.19 €0.20 €0.21 €0.22 €0.23 €0.24 €0.25

75 GWh 1.96% 2.15% 2.35% 2.54% 2.73% 2.91% 3.09% 3.27% 3.45%

80 GWh 2.18% 2.39% 2.59% 2.79% 2.98% 3.18% 3.37% 3.56% 3.74%

85 GWh 2.40% 2.61% 2.83% 3.03% 3.24% 3.44% 3.64% 3.83% 4.03%

90 GWh 2.61% 2.84% 3.06% 3.27% 3.49% 3.70% 3.90% 4.10% 4.30%

95 GWh 2.83% 3.06% 3.29% 3.51% 3.73% 3.95% 4.16% 4.37% 4.58%

100 GWh 3.03% 3.27% 3.51% 3.74% 3.97% 4.19% 4.41% 4.63% 4.84%

105 GWh 3.24% 3.49% 3.73% 3.97% 4.20% 4.44% 4.66% 4.88% 5.10%

#### Sale price

	Sale price									
		€ 0.17	€ 0.18	€ 0.19	€ 0.20	€ 0.21	€ 0.22	€ 0.23	€ 0.24	€ 0.25
	75 GWh	4.23%	4.61%	4.98%	5.34%	5.69%	6.02%	6.35%	6.67%	6.98%
p.a.	80 GWh	4.66%	5.05%	5.43%	5.80%	6.16%	6.5%	6.84%	7.17%	7.48%
	85 GWh	5.08%	5.48%	5.87%	6.24%	6.61%	6.96%	7.31%	7.64%	7.96%
Production	90 GWh	5.48%	5.89%	6.29%	6.67%	7.04%	7.40%	7.75%	8.10%	8.43%
Pro	95 GWh	5.87%	6.29%	6.69%	7.08%	7.46%	7.83%	8.19%	8.53%	8.87%
	100 GWh	6.24%	6.67%	7.08%	7.48%	7.87%	8.24%	8.61%	8.96%	9.30%
	105 GWh	6.61%	7.04%	7.46%	7.87%	8.26%	8.64%	9.01%	9.37%	9.71%

#### Sensitivity Table: AAA-rated Sukuk IRR Sale price

		€ 0.17	€ 0.18	€ 0.19	€ 0.20	€ 0.21	€0.22	€ 0.23	€ 0.24	€ 0.25
	75 GWh	0.81%	0.9%	0.98%	1.07%	1.15%	1.24%	1.32%	1.40%	1.48%
p.a.	80 GWh	0.91%	1,00%	1.09%	1.18%	1.27%	1.36%	1.45%	1.53%	1.62%
	85 GWh	1.01%	1.10%	1.20%	1.29%	1.39%	1.48%	1.57%	1.66%	1.75%
Production	90 GWh	1.10%	1.20%	1.30%	1.40%	1.50%	1.60%	1.69%	1.79%	1.89%
Po	95 GWh	1.20%	1.30%	1.41%	1.51%	1.61%	1.72%	1.82%	1.92%	2.02%
	100 GWh	1.29%	1.40%	1.51%	1.62%	1.73%	1.83%	1.94%	2.05%	2.15%
	105 GWh	1.39%	1.50%	1.61%	1.73%	1.84%	1.95%	2.06%	2.17%	2.28%



### **INVESTMENT RISK AND MITIGATION**

	KEY RISK	PROB	IMPACT	MITIGATION
Operating Risk	The Operating Company does not manage the sites as intended, leading to a lower-than expected total electricity production.			We strategically choose the Operating Company with a strong track record.
Market Risk	Increased production might lead to a drop in electricity prices.			Demand largely outweighs supply and this should go on for the twenty coming years.
Political Risk	The region is under threatening political instability, which can damage the economic environment.			By diversifying the investment over 7 countries, we will reduce our exposure to individual country risk.

