

Building the first nitrogen Fertilizers plant in Senegal

May 2024 update

AGENDA

THE PROJECT IN A GLIMPSE

THE SPONSOR : PETROSEN TRADING & SERVICES

THE FUNDAMENTALS OF THE PROJECT

THE DEVELOPMENT IMPACT OF THE PROJECT

CALENDAR AND NEXT STEPS FOR THE PROJECT

THE PROJECT IN A GLIMPSE

KEY FIGURES

- ✓ **Final Product :** Urea (Nitrogen Fertilizers)
- ✓ **Location :** Ndayane (Coastal area with a deep sea Port)
- ✓ **Capacity :** 1.2 million metric tons per annum (mtpa) of urea
- ✓ **Direct jobs created during construction :** up to 4000
- ✓ **Direct jobs created and permanent during operations :** up to 400
- ✓ **Exports oriented :** maritim (Brazil, USA) and terrestrial (Mali, Guinea etc.)
- ✓ **...with carbone capture :** to produce low carbon intensity Urea



Example : Garabogaz Urea Plant in Turkmenistan

THE PROJECT IN A GLIMPSE

FINANCING THE PROJECT

- ✓ **A Government priority project** : sponsored and developed by PETROSEN
- ✓ **Financing schemes** : Project finance with a SPV named **SEFCO** or EPC+F
- ✓ **Project CAPEX** : 1.54 billion USD (if Carbone capture not implemented)
- ✓ **Debt-to-Equity ratio** : 70 / 30 as Project Finance or 85 /15 as EPC+F
- ✓ **Expected project IRR** : around 15 %
- ✓ **Main prices assumptions** : Gas : 4 \$/Mmbtu & Urea : 350 to 375 \$/ton
- ✓ **Early Project Development cost** : 6 millions USD (excluding FEED)
- ✓ **What we are looking for** : Lenders or investors for the development phase

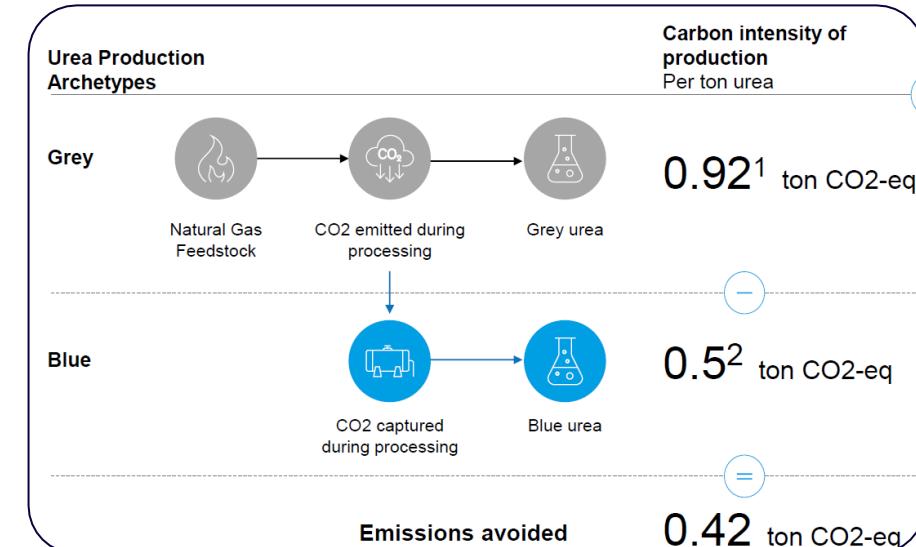
SENEGAL FERTILIZER COMPANY



THE PROJECT IN A GLIMPSE

A LOW CARBON PROJECT

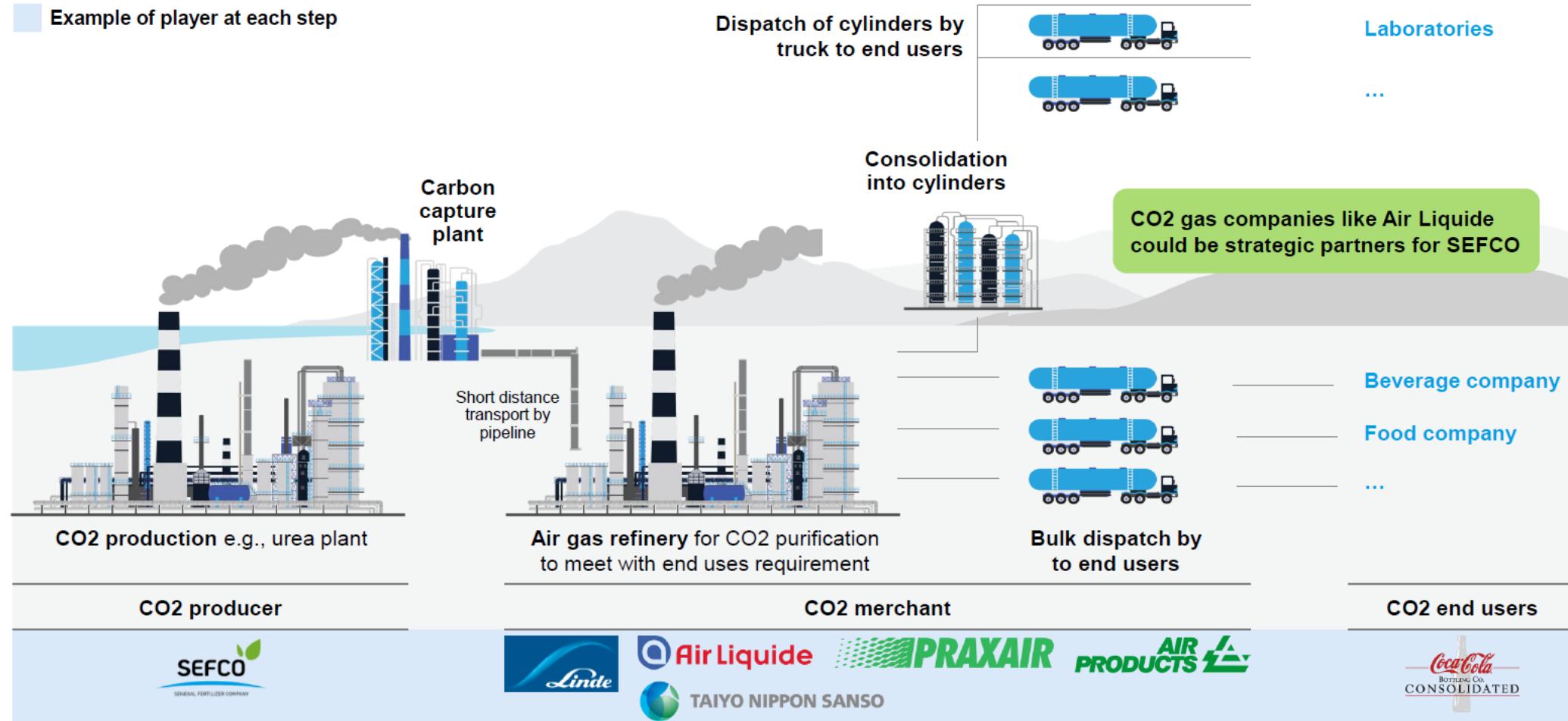
- ✓ SEFCO Urea plant will produce **450,000 tons of CO2 per annum**
- ✓ By capturing this CO2 volumes, SEFCO can :
 - **store it in the ground** and sell it as carbon credits
 - **sell it to commercial CO2 merchants** like Air Liquide
 - **send it back in the urea manufacturing process**
- ✓ SEFCO would be the **1st Urea Plant** in Sub-saharan Africa to implement carbone capture technology.
- ✓ **Commercial CO2** is key to developing the food and beverage industries



THE PROJECT IN A GLIMPSE

THE CO₂ COMMERCIAL OPPORTUNITY

Example of player at each step



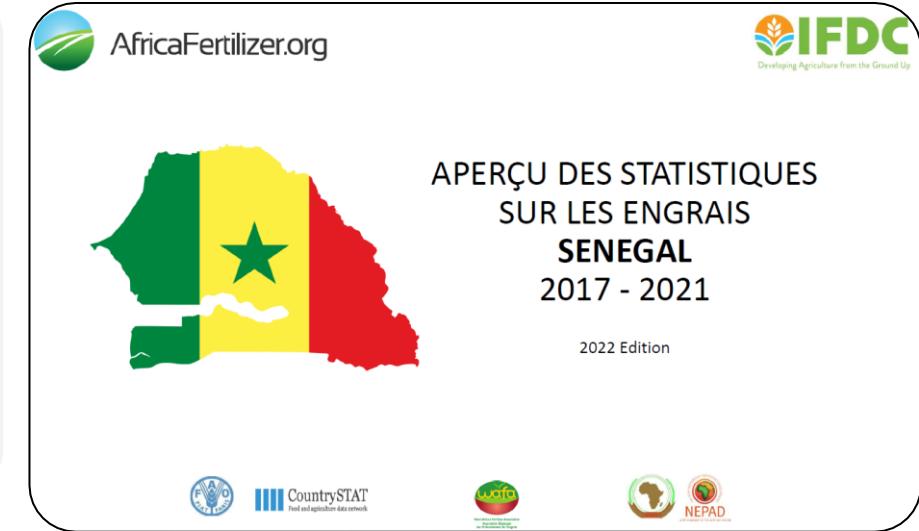
THE PROJECT IN A GLIMPSE

FERTILIZERS IN SENEGAL

- ✓ 75, 000 tons of urea have been imported in Senegal in 2022 (75% from Russia in 2021 but 56 % from Nigéria (Indorama) in 2022))
- ✓ Importers : Regrouped in APESEN (Indorama, Sedab etc.)
- ✓ Peak demand of fertilizers in Senegal : June, July and August

DEMANDE D'ENGRAIS PAR CULTURE ET PAR SAISON		Semis	Croissance	Récolte	◆ Demande de pointe d'engrais									
Saison	Culture	Jan	Fév	Mar	Avr	Mai	Juin	Juil	Août	Sep	Oct	Nov	Déc	
Saison principale (longues pluies)	Arachide						◆	◆	◆	◆				
	Maïs						◆	◆	◆					
	Mil et Sorgho						◆	◆	◆					
	Riz						◆	◆	◆	◆	◆	◆		
	Coton						◆	◆	◆					
Contre-saison (petites pluies)	Arachide, Maïs, Mil, Riz						◆	◆	◆	◆				

Source : FAO/GIEWS, FEWSNET



Types engrais	2017	2018	2019	2020
Urée	53 940	69 481	58 257	69 949
NPK	5 304	39 000	23 385	28 172
KCl	9 982	3 444	4 538	7 566
DAP	-	500	1 187	1 625
Autres engrais	2 259	4 469	8 767	16 487
	71 485	116 894	96 134	123 799

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THE SPONSOR : PETROSEN TRADING & SERVICES

A B O U T U S

- ✓ PETROSEN Trading & Services - PT&S, is an affiliate of PETROSEN HOLDING, specialized in mid- and downstream oil and gas activities ;
- ✓ Our ambition is to supply a reliable and affordable energy and sufficient fertilizers to the senegelase people;

Our expertise



RETAIL



SUPPLY/ TRADING



COMMERCE



INNOVATION

THE SPONSOR : PETROSEN TRADING & SERVICES

OUR 2022 MILESTONES



17*



9,62 T



Gasoil : 468 KT
Super : 118 KT
GPL : 54,27 KT

- Creation of an A1 jet safety stock following SMCADY's NOTAM.
- Continued supply to international markets despite severe tensions.

T1

Jan 2022 – March 2022

- Continued supply to SAR during metal shutdown
- Commissioning of the Yenne, Dagana and Fatick stations

Apr 2022 – Jun 2022

T3

July 2022 – Sept 2022

T2

- Strengthening of MGO activities, with the arrival of new customers such as Eiffage Marine
- MOU signed with Mitsubishi and Calik Enerji for fertilizer project
- Commissioning of Mbour pêche station
- End of Arrêt métal

Oct. 2022 – Dec 2022

T4

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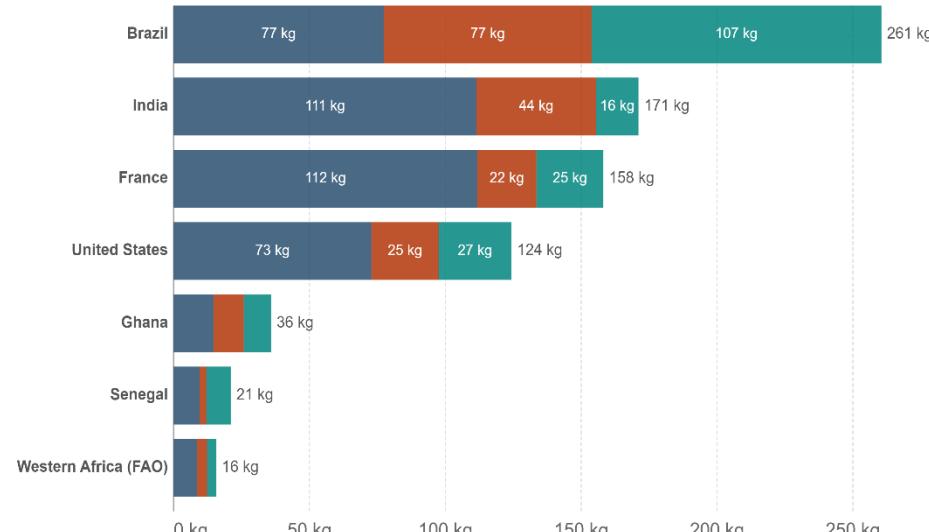
THE FUNDAMENTALS OF THE PROJECT

MARKET POTENTIAL

- ✓ **70,000 tons per annum** : Urea imports in Senegal (2020)
- ✓ **420,000 tons per annum** : Urea imports in Mali, Ghana, Côte d'Ivoire & Burkina Faso (2020)
- ✓ **4,500,000 tons per annum** : Urea imports in the US
- ✓ **7,100,000 ton per annum** : Urea imports in Brasil
- ✓ **USA and Brasil urea sources** : Qatar, Russia, Algeria, Saudi Arabia
- ✓ **A huge potential for nitrogen** in West Africa : 9 kg/ha vs 73 kg/ha in the US

Fertilizer use per hectare of cropland, 2019

■ Nitrogen ■ Phosphorous ■ Potassium



Source: Food and Agriculture Organization of the United Nations

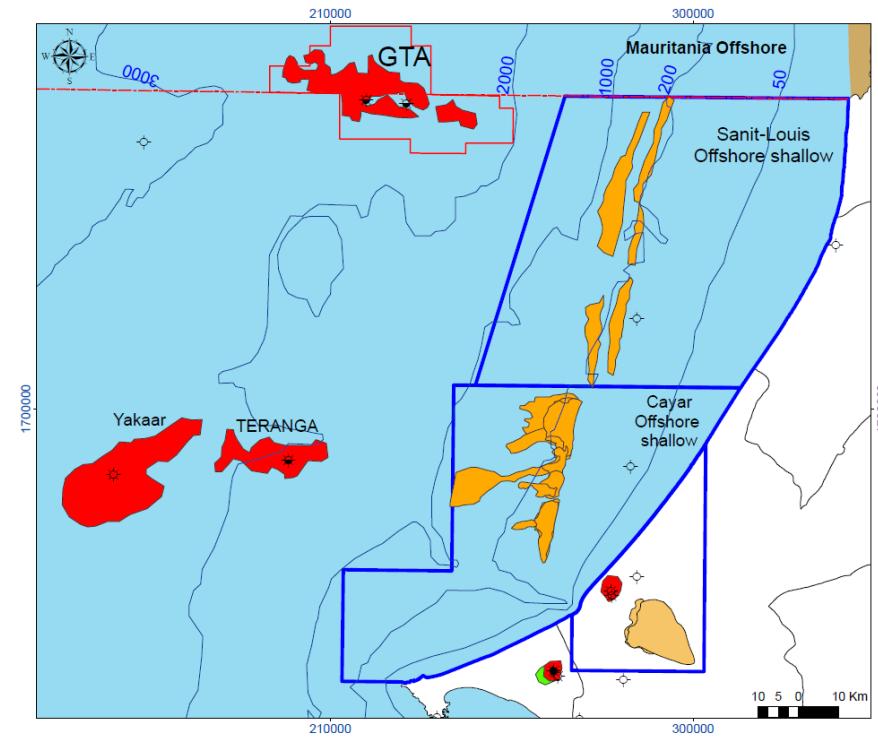
OurWorldInData.org/fertilizers • CC BY

Mean Fertilizer use per hectare of cropland, 2019 (source : FAO)

THE FUNDAMENTALS OF THE PROJECT

THE GAS RESOURCES

- ✓ **GTA (1)** : Offshore Saint-Louis, Mauritania border
- ✓ **Yakaar-Teranga (2)** : Offshore Cayar, North-West of Dakar
- ✓ **Sangomar Associated gas (3)** : Offshore Djiffere, South of Dakar
- ✓ **32 Trillion Cubic Feet (TCF)** : Total gas volumes discovered (1) + (2) + (3)
- ✓ **Gas** : 100 MMscf/d Daily needs for the Ammonia and Urea plant
- ✓ **Gas network** : Pipelines owned and operated by RGS, a PETROSEN company (51% majority share)



Senegal gas fields : GTA, Yakaar Teranga (red)

THE FUNDAMENTALS OF THE PROJECT

THE POLITICAL SUPPORT

- ✓ **Ministry of Energy** drafted an Oil & Gas Master Plan(OMGP) since 2019
- ✓ **Gas-to-Power and Fertilizers** are the main domestic gas projects of OGMP
- ✓ A strong commitment from **Ministry of Energy**
- ✓ **The SEFCO Urea Project** was labeled as one of « the priority projects » in the third phase (PAP3) of Plan Senegal Emergent (PSE), the strategic development plan of the Republic of Senegal.
- ✓ Petrosen to sign a convention with **Ministry of Finance** and **Ministry of Energy** granting exclusive project rights on a **5 years period** to develop the project (Q2 2024).

375. Le PAP 3 comporte un portefeuille de projets et programmes, dont un noyau de 32 projets phares répartis dans neuf (9) domaines moteurs identifiés ayant un fort potentiel de création de richesse et d'emplois.

Tableau 7 : Domaines moteurs et projets phares

Souveraineté alimentaire	Développement durable	Infrastructures et Hub logistique industriel et régional
1) Mise en place de projets d'agrégation ciblés sur les filières MVA et Elevage ; 2) Développement de 4 corridors céréaliers ; 3) Développement des chaînes de valeur halieutique et aquacole ; 4) Crédit d'agropolices intégrées et compétitives.	11) Accès universel à l'eau et à l'assainissement ; 12) Programme Zéro déchet ; 13) PSE VERT - Promotion de l'économie verte.	19) Zones industrielles intégrées ; 20) Hub Logistique intégré ; 21) Plateforme Industrielle intégrée ; 22) Mobilité durable et Innovation ; 23) Infrastructures énergétiques ; 24) Mise en place d'un écosystème de fabrication de matériels.
Hub Multiservices et Tourisme	Habitat social et écosystème de la construction	Industrialisation
5) Hub Aérien Régional ; 6) Zones Dédiées à l'Economie Numérique ; 7) Sénégal Hub Médical ; 8) Zones Touristiques Intégrées.	14) Développement d'un Écosystème de la construction ; 15) Programme d'accélération de l'offre en habitat social.	25) Projets d'industrialisation à vocation régionale : agroalimentaire, pharmaceutique, métallurgique, etc. ; 26) Industrie de construction navale ; 27) Industrie de fertilisants (urée, engrangis) ; 28) Industrie de mécanisation de l'agriculture.
Modernisation Graduelle de l'Économie Sociale	Transition et sécurité énergétiques	Transition numérique
9) Développement d'infrastructures commerciales et d'appui à la production ; 10) Plan Multisectoriel du Micro-Tourisme et des Industries Culturelles et Créatives.	16) Stratégie d'approvisionnement en hydrocarbures et renforcement de la sécurité énergétique ; 17) Accès universel à l'électricité et renforcement du mix énergétique ; 18) Projets de développement du Réseau gazier.	29) Programme de digitalisation de l'Administration publique (PRODAP) ; 30) Adrénaline numérique ; 31) Projet national d'Enseignement numérique ; 32) Souveraineté numérique.

376. La consolidation de la trajectoire de croissance de l'économie sénégalaise requiert une mise en œuvre réussie des réformes identifiées et aptes à accélérer les actions du Gouvernement. Le Sénégal s'engage ainsi à dérouler un ensemble de réformes d'ordre sectoriel et transversal, dont 20 réformes phares³⁹ (cf. annexe).

RÉFORMES TRANSVERSALES :

- Foncier

377. Malgré les efforts entrepris en termes de mise à disposition du foncier, le Sénégal doit continuer à mettre en œuvre et à accélérer cette réforme.

Les mesures suivantes sont retenues à cet effet :

1. l'élargissement du réseau des bureaux du registre foncier pour l'enregistrement des droits d'utilisation ;
2. la consignation des transactions et le transfert de l'information afin d'établir une base de données nationale ;
3. la modernisation des infrastructures connexes (système d'information foncière et acquisition d'images satellites) ;

³⁹ Ces 20 réformes phares feront l'objet d'une attention particulière de la part des autorités et d'un suivi opérationnel.

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A STRONGER AGRICULTURE

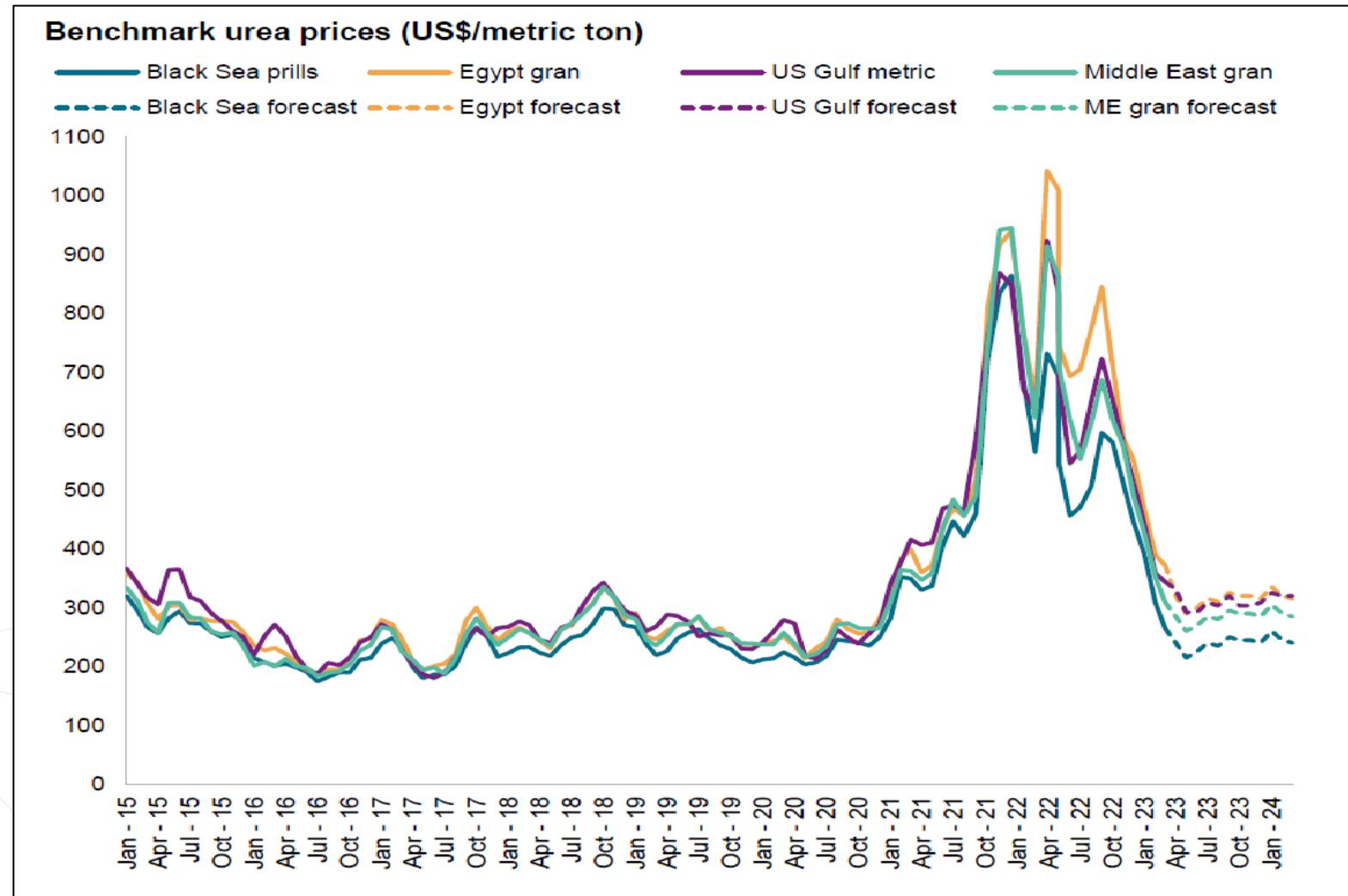
- ✓ A reliable and affordable **supply of urea** to West African Farmers
- ✓ A national and affordable **source of urea for NPK blending**
- ✓ **Augment food security** by improving crops yields
- ✓ **Power purchase of farmers will be protected** against global prices surge



A farmer using urea over crops

THE DEVELOPMENT IMPACT OF THE PROJECT

UREA PRICE (HISTORIC 2015 – 2023) AND OUTLOOK (2024)



THE DEVELOPMENT IMPACT OF THE PROJECT

A STRONGER ECONOMY

- ✓ Lowering of subsidies on fertilizers (70 millions of USD)
- ✓ A better foreign exchange balance for Senegal
- ✓ Development of railways and roads to facilitate continental exports
- ✓ More industrialization and trade : NPK blenders and fertilizers retailers
- ✓ Enhanced Bulk export activity for Ndayane Deep Sea Port



NPK Blending plant :

a business opportunity for private actors thanks to Urea availability

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CALENDAR AND NEXT STEPS FOR THE PROJECT

C U R R E N T S T A T U S

- ✓ **Q3 2022:** MoU signed with Mitsubishi and Calik Enerji to conduct a Feasibility study
- ✓ **Q1 2023 :** Created the SPV : Senegal Fertilizer Company (SEFCO)
- ✓ **Q2 2023 - Feasibility results in 2023** Urea Monoproduction
- ✓ **Q3 2023 : Land negotiations on-going with DP World : Ndayane (100 ha)**
- ✓ **Q1 2024 : Carbon capture study** done by Manufacturing Africa/McKinsey
- ✓ **Q1 2024 - Detailed market study** done by Manufacturing Africa/McKinsey

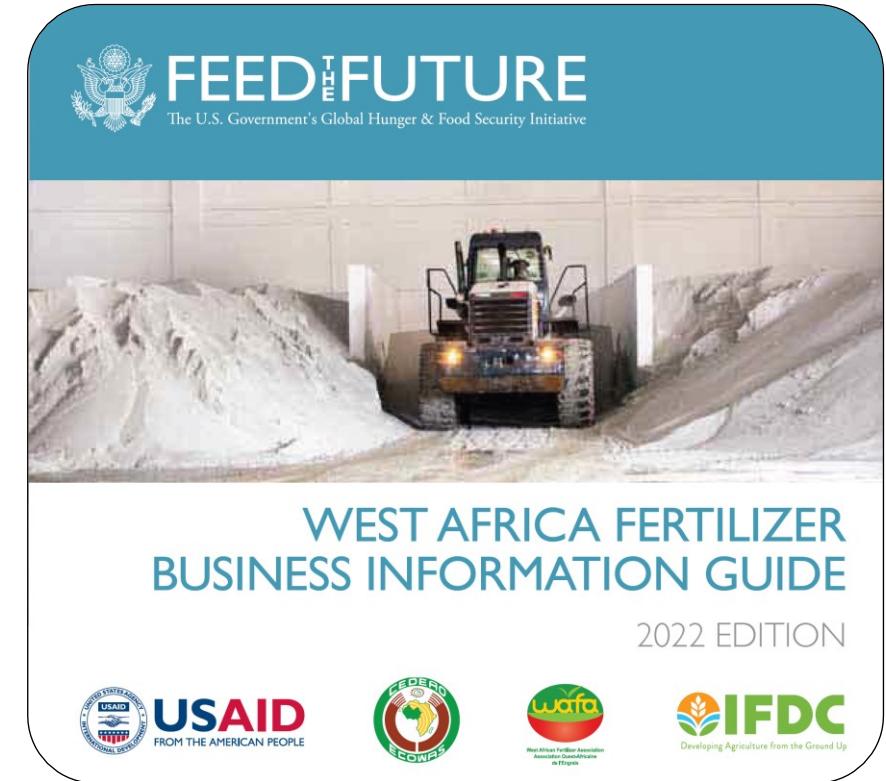


MoU signed for prefeasibility study with Mitsubishi and Calik Enerji in Tunis during TICAD8, August 27, 2022

CALENDAR AND NEXT STEPS FOR THE PROJECT

NEXT STEPS

- ✓ **Q1 2024 - Economic Impacts study on going** : to know the macro economic impacts of the project to negotiate a competitive gas price (by BOS-PSE)
- ✓ **Q3 2024 - Sign the Land agreement** : 100 ha to enable EIA and FEED
- ✓ **Q3 2024 - Start the Environmental and Social Impact Assessment** : to measure and mitigate the environmental and social impacts of the project.
- ✓ **Q3 2024 - Commercial trips** and offtake negotiations : USA, Brasil, West Africa etc.
- ✓ **Q1-Q2 2025 - Gas supply agreement** : to be signed between SEFCO and National Gas Aggregator



The image shows the cover of the "WEST AFRICA FERTILIZER BUSINESS INFORMATION GUIDE 2022 EDITION". The cover is blue at the top with the title and subtitle. Below is a photograph of a white bulldozer working on a large pile of white fertilizer. At the bottom, there are logos for USAID, FEDER, WAFA, and IFDC.

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The U.S. Government's Global Hunger & Food Security Initiative

WEST AFRICA FERTILIZER
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2022 EDITION

USAID FROM THE AMERICAN PEOPLE

FEDER RECOPA'S

WAFA

IFDC Developing Agriculture from the Ground Up

Feed The Future and Africa Fertilizer Initiatives are the most reliable source for fertilizers information in West Africa.



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