Global Gateway

Pre-feasibility Study for the Angola (Soyo) –DR Congo (Inga) Power Interconnector

EU CEPA – The Continental Energy Programme in Africa

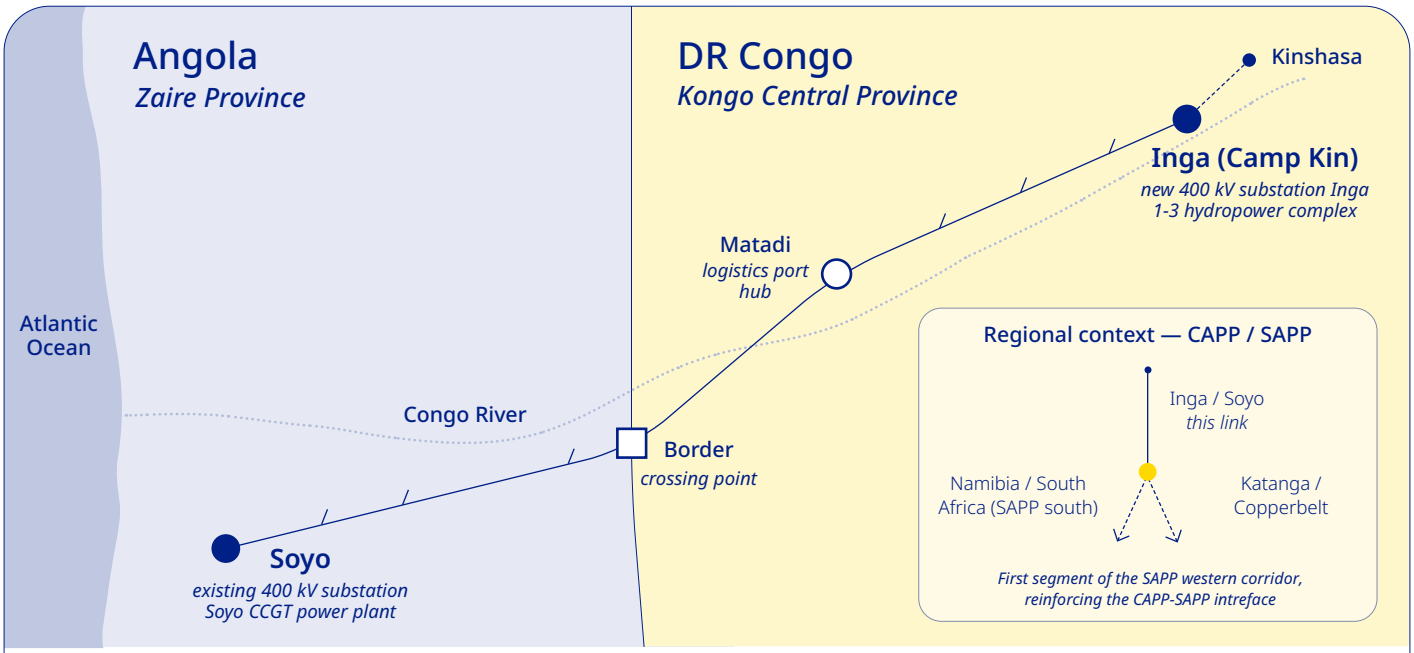
SEPTEMBER 2026

Opening the western corridor between Central and Southern Africa

The Angola–DR Congo interconnector is a 190 km high-voltage line linking the Soyo substation in north-west Angola to the Inga hydropower complex in Kongo Central province, DR Congo.

It is designed to work in both directions and in two phases. In the near term it lets surplus Angolan generation reach Kinshasa in the DRC, where the grid currently serves only part of effective demand. Once the Inga 3 hydropower plant is commissioned, it becomes a major evacuation route for some of the lowest-cost clean power on the continent. The Angola – DR Congo interconnector is a priority project under the Continental Power System Master Plan (CMP), supported by the EU-funded Continental Energy Programme in Africa (CEPA) as part of the Global Gateway initiative.

Indicative corridor (not to scale)

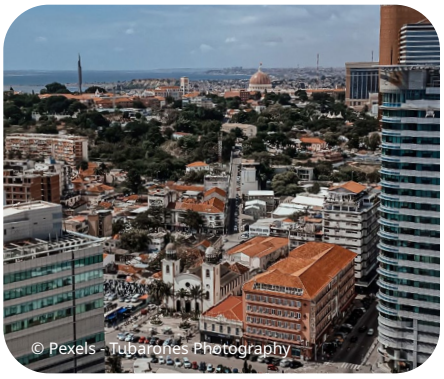


190 km	EUR 644 M	2.5 GW	54% / 8.24	~ 30,800
400 kV double-circuit overhead line: Soyo - Matadi - Inga	Estimated capital cost	Firm transfer capacity, 400 kV double-circuit option	Economic IRR / benefit-to-cost ratio (without carbon benefits)	Job-years estimated over project delivery

Why this project?

Angola

Angola is building a large, increasingly hydro-based system in the north of the country and is looking for markets for it. **Peak demand is projected to rise from 5,195 MW in 2025 to 9,180 MW by 2035, and annual energy demand from 30,275 GWh** to **53,316 GWh** over the same period - average growth of around 6% a year. Roughly two-thirds of that load sits in the northern network, which is where Soyo is. The interconnector aims at providing Angola an export route for the coming years, and an access to low-cost Inga power later.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DR Congo

DR Congo has one of the world's great hydropower resources and, at the same time, a capital city that cannot get enough power. **Supply to Kinshasa currently meets only about 55% of real demand**, leaving the rest unserved or dependent on costly private generators. The western grid is capped at around 888 MW by what Inga 1 and 2 and the existing network can deliver; **an import of 600–750 MW through the interconnector would unlock supply to about 1,098 MW**. Once Inga 3 is commissioned - with an announced capacity of up to 11,000 MW - the flow reverses and the line becomes an export corridor.

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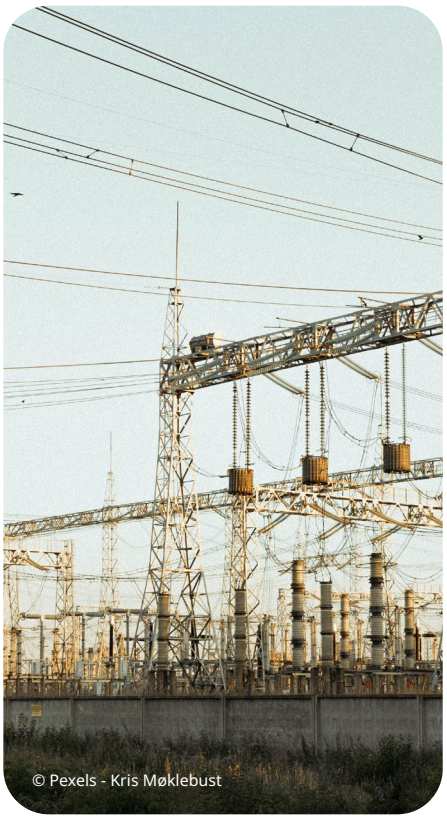
One grid, one market, one vision

This line does more than connect two countries. It is the opening segment of the planned western corridor of the Southern African Power Pool (SAPP), the route that would carry Inga's clean, year-round hydropower south towards Namibia and South Africa (while Inga also transfers power south east towards the Katanga and Copperbelt mining regions in DRC and Zambia). It also strengthens the interface between the Central African Power Pool (CAPP) and SAPP. The Inga site is unusual in that it draws on the rainy seasons of both hemispheres, giving it an almost constant river flow and, with it, one of the lowest generation costs anywhere on the continent. Each link of this kind moves the African Union's aim of one grid, one market, one vision closer to reality.

Benefits of the Interconnector

- Access to least-cost electricity
- Regional power trade
- Grid reliability and redundancy
- Energy access in border areas
- Industrial growth along the corridor
- Lower carbon intensity

The investment case and technical snapshot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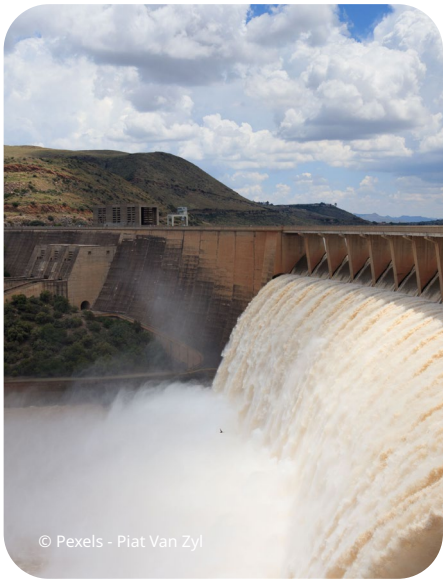
Project scope

The recommended option is a 400 kV double-circuit overhead line running 190 km from the existing Soyo 400 kV substation in Angola, via Matadi, to a new 400 kV substation at Inga in DR Congo. On the Congolese side the works include the new Camp Kin substation with 400/220 kV transformers, and two further 400/220 kV transformers of 350 MVA at Kinshasa (Kimwenza); on the Angolan side, a 400 kV bay and panel at Soyo. The line will connect at Inga to the planned 400 kV "Boucle de l'Amitié" loop, and at Soyo to the whole Angolan 400 kV transmission network.

Two options studied, one recommended now

The study compared two strategies against a "do-nothing" case: a 400 kV double-circuit line with 2.5 GW of firm transfer capacity, and two 765 kV single-circuit lines totalling 5 GW. Both are economically strong. The 765 kV option performs better on almost every measure and would open the corridor to bulk transfers deeper into Southern Africa. But 765 kV is not currently among Angola's construction and operation standards and would need to be harmonised at SAPP level first. The 400 kV option is therefore the one recommended for near-term implementation, with the higher-capacity route remaining open as the corridor develops.

Feature	400 kV (recommended now)	765 kV (longer-term option)
Configuration	Double circuit	Two single-circuit lines
Firm transfer capacity	2.5 GW	5 GW
Estimated capital cost	EUR 644 million	EUR 859 million
Economic IRR	54%	52%
Benefit-to-cost ratio	8.24	11.20
Constraint	None, within existing Angolan standards	765 kV not yet an Angolan standard; needs SAPP-level harmonisation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The economic case

The returns are unusually high for a transmission project, and the reason is simple: the difference in the value of electricity on either side of the line is very large. Before Inga 3, Angolan generation at around 11-12 EUR cents per kWh substitutes for unserved demand and emergency supply in western DR Congo valued at around 18 EUR cents. After Inga 3, hydropower at around 5.9 EUR cents flows the other way, displacing Angolan generation costing over 10 EUR cents. The economic internal rate of return is about 54% for the recommended option, with a benefit-to-cost ratio of 8.24.

The result holds up under pressure. The study tested discount rates of 8%, 10% (base case) and 12%; capital costs at two and three times the base estimate; and expected Inga 3 commissioning delayed from 2035 to 2040 and then 2045. The project remains strongly profitable in every case. It also remains profitable when a 22% export tax on Congolese electricity is applied.

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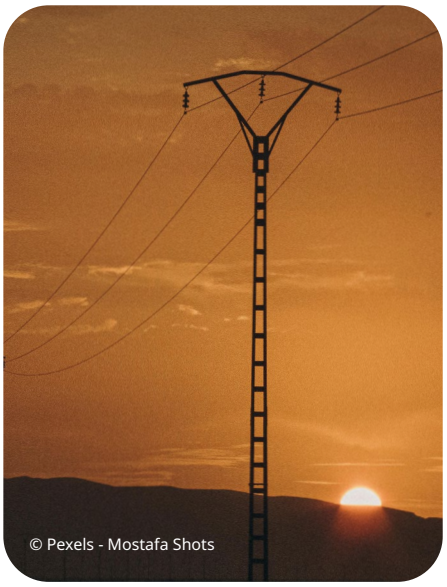
Financing approach

The recommended route is blended finance: an Independent Power Transmission vehicle alongside sovereign loans and grants from international lenders, backed by government guarantees, with the line held by the transmission company under a build-own-operate-transfer or build-operate-transfer arrangement. This fits the existing legal frameworks in both countries - Angola's PPP Act of 2019 and DR Congo's PPP law of 2018 - and both strategies conclude that the project is suitable for private participation.

Potential partners include the African Development Bank, the World Bank, the European Investment Bank, the Development Bank of Southern Africa, Africa50 and bilateral agencies. There is a particular opportunity here: the World Bank is already assembling interested private investors for Inga 3 itself, and the same investors have an obvious interest in the corridor that would evacuate its output.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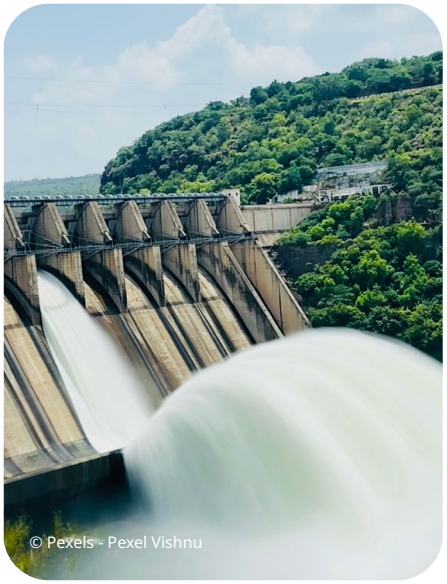
Where private firms come in

The interconnector will not be procured as a single contract. It will be delivered through a series of separate tenders over the coming years, with different types of companies competing at each stage. The main private sector opportunities are in:

- **Feasibility study and environmental assessment.** Detailed technical, economic and environmental work, including the full Environmental and Social Impact Assessment (ESIA) and Resettlement Action Plans (RAP).
- **Design and construction supervision.** Conceptual and detailed design of the line and substations, plus an independent "owner's engineer" appointed by the two utilities to verify that milestones are genuinely met before payment.
- **Construction.** Engineering, Procurement and Construction across difficult terrain — the northern Angolan section has very limited road access, so logistics through the ports of Soyo and Matadi form part of the delivery challenges / opportunities mix.
- **Equipment supply.** Transformers, switchgear and protection and control systems, supplied either directly to the utilities or through the construction contractor.
- **Transmission concession or equity participation.** Both countries' legal frameworks now permit private transmission concessions, and a special-purpose vehicle jointly held by the utilities RNT (Angola) and SNEL (DR Congo) with private shareholders is one of three models under consideration.
- **Legal and financial advisory.** Structuring the cross-border vehicle, negotiating loan agreements, and preparing the intergovernmental arrangements and the power trading agreement to be approved by the regulators IRSEA (Angola) and ARE (DR Congo).

The package structure and timings above are indicative at this stage and will be confirmed through the feasibility and structuring phases.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Roadmap and how to engage

Current status

The pre-feasibility study is complete (January 2026) and has been validated by the SAPP and the two national utilities, with final results presented in June 2026. The study goes beyond the usual pre-feasibility scope, including initial elements of a full feasibility study, and places the project at the feasibility (S2B) maturity stage in the CMP pipeline. The project has now moved from long-term planning towards implementation.

The five phase implementation timeline.

1 **Feasibility study and full ESIA |** 18–24 months

Detailed technical design options, cost-benefit analysis, conceptual design of lines and substations, full ESIA including line routing and RAP.

2 **Project structuring |** 9–12 months

Divide the project into manageable components; assign roles and responsibilities for implementation.

3 **Transaction and financial close |** 6–9 months

Financial and legal documentation — loan agreements, contracts and security agreements.

4 **Tendering |** 9–12 months

Public procurement by the responsible authorities, with procurement specialists and consulting engineers.

5 **Construction and commissioning |** 18–24 months

Execution of the works; testing, commissioning and handover.

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Governance

The two governments are expected to sign a bilateral Memorandum of Understanding or Joint Implementation Agreement setting out roles, cost-sharing and responsibilities. A Joint Project Steering Committee, drawing high-level representatives from each country's energy ministry and utility, will provide strategic oversight, and a dedicated Project Management Unit staffed from both countries will coordinate day-to-day delivery. RNT and SNEL act as implementing agencies. AUDA-NEPAD and SAPP coordinate at continental and regional level; tariff and wheeling arrangements require approval from IRSEA in Angola and ARE in DR Congo.

Indicative opportunity windows

Feasibility and advisory services: now to near-term.

Engineering, Procurement and Construction, and equipment supply: Indicatively around 2031–2032, following feasibility, structuring and tendering.

Timings are indicative and depend on financing and approvals.

Corridor and community

The project is designed to leave more than a power line. A corridor development strategy will align the investment with local priorities in Zaire and Uíge provinces in Angola and Kongo Central in DR Congo, working with provincial governments, municipal administrations and customary authorities along the route. Local employment targets, apprenticeship and vocational training programmes, and local sourcing of materials and services are all part of the approach - the study estimates around 30,800 job-years over delivery of the recommended option. The World Bank is already preparing a skills development programme for Inga 3 itself, which could be extended to transmission line construction.

Environment

The preliminary environmental scoping identified no impact that would prevent the project from proceeding. The recommended route keeps a buffer of at least 5 km from national parks and reserves, skirts the Moyambe Forest Nature Reserve, follows existing roads and rights of way where it safely can, and avoids dense settlements. A full Environmental and Social Impact Assessment and Resettlement Action Plans will be prepared at the feasibility stage. Once Inga 3 is commissioned, the corridor's principal environmental benefit is the displacement of thermal generation, ultimately including ageing coal plants in the south of the SAPP region.

CEPA is funded by the European Union under the Global Gateway Investment Strategy and implemented under the leadership of the African Union Commission (AUC–DIE), AUDA-NEPAD and AFREC. A Global Gateway and Team Europe initiative, in partnership with the African Union.

Follow the programme