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RENEWABLE ENERGY
PROJECTS WORLDWIDE

Roadmap for Ghana's Green Energy Transition

Development, Implementation and Operation of six (6) Onshore and
two (2) Offshore Wind Farms in Ghana

Accra / Zurich, March 2026

Presented to: The New NDC Government of Ghana



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Leading Companies

NEK undertook first wind energy research in Ghana in 1998 and subsequently carried out extensive wind resource assessments throughout the country of Ghana, contributed to the implementation of the first Renewable Energy Act in Ghana in 2011 and subsequently started the development of real wind park projects in 2012. NEK established in Ghana a branch in 2003 (NEK Ghana Ltd.), who oversaw all local development work for our undertakings in Ghana.

The wind farm project's assets are all concentrated in Special Purpose Vehicles (SPV's), which were established in Ghana under the Swiss Holding Company Upwind International AG in 2014. Each project has all of its assets in one SPV called "Upwind plus wind project name" in Ghana.

NEK then established in 2024 the new renewable energy platform called Anansi Green Energy Ltd. (AGE) in Accra, which will serve as the new vehicle through which green power will be distributed to the offtakers in Ghana and abroad.

NEK Umwelttechnik AG



The experienced wind developer

Upwind International AG



The Holding Company Structurer

Anansi Green Energy Ltd.



The Renewable Energy Platform in Ghana





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1 BACKGROUND

1.1 ABOUT NEK UMWELTTECHNIK AG

- NEK is a Swiss engineering company in the green energy sector, established in Switzerland in 1989 and active in Ghana since 1998.
- NEK has successfully developed wind farms in countries such as Brasil, Spain, Italy, Romania, Switzerland and now in Ghana.
- The Ghana wind energy assets developed by NEK consist of 6 land-based wind energy projects between Tema and Ada with a total planned capacity of approx. 1,500 MW, ready for immediate implementation, based among others on long-year comprehensive wind measurements.
- NEK has initiated in 2021 the development of 2 large-scale offshore wind energy projects off the coasts of Ningo and Anloga in combination with floating solar devices with an expected installed capacity of more than 3,000 MW, to be implemented in phases.
- The 6 onshore and 2 offshore wind / floating solar energy projects of NEK will produce in the future more than 12,500 GWh of green, cheap and reliable electricity per year for its clients.
- NEK has established together with its partners a green energy platform in Ghana called **Anansi Green Energy Ltd.** to deliver to its future clients clean, cheap, reliable, home-made, sustainable and never-ending electricity.
- NEK's projects do not require any fuel, NLG, gas, oil or other fossil, outdated energy sources to produce electricity - our "fuel" is the wind and the sun, which is never ending, based in Ghana and for free, coming home every day.

1.2 ABOUT THE CURRENT ENERGY SITUATION OF GHANA

- Ghana requires a drastic, immediate and engaged revolution of its energy sector.
- The actual situation with no diversification of the energy mix (approx. 70% are thermal, while approx. 30% are hydro) can no longer satisfy the increasing demand.
- The dependence on the possibility to deliver gas to the different thermal plants and the unpredictable level of the lakes at Akosombo, Kpong and Bui do not allow for a strategic planning of the future energy output if just having these two energy sources available.



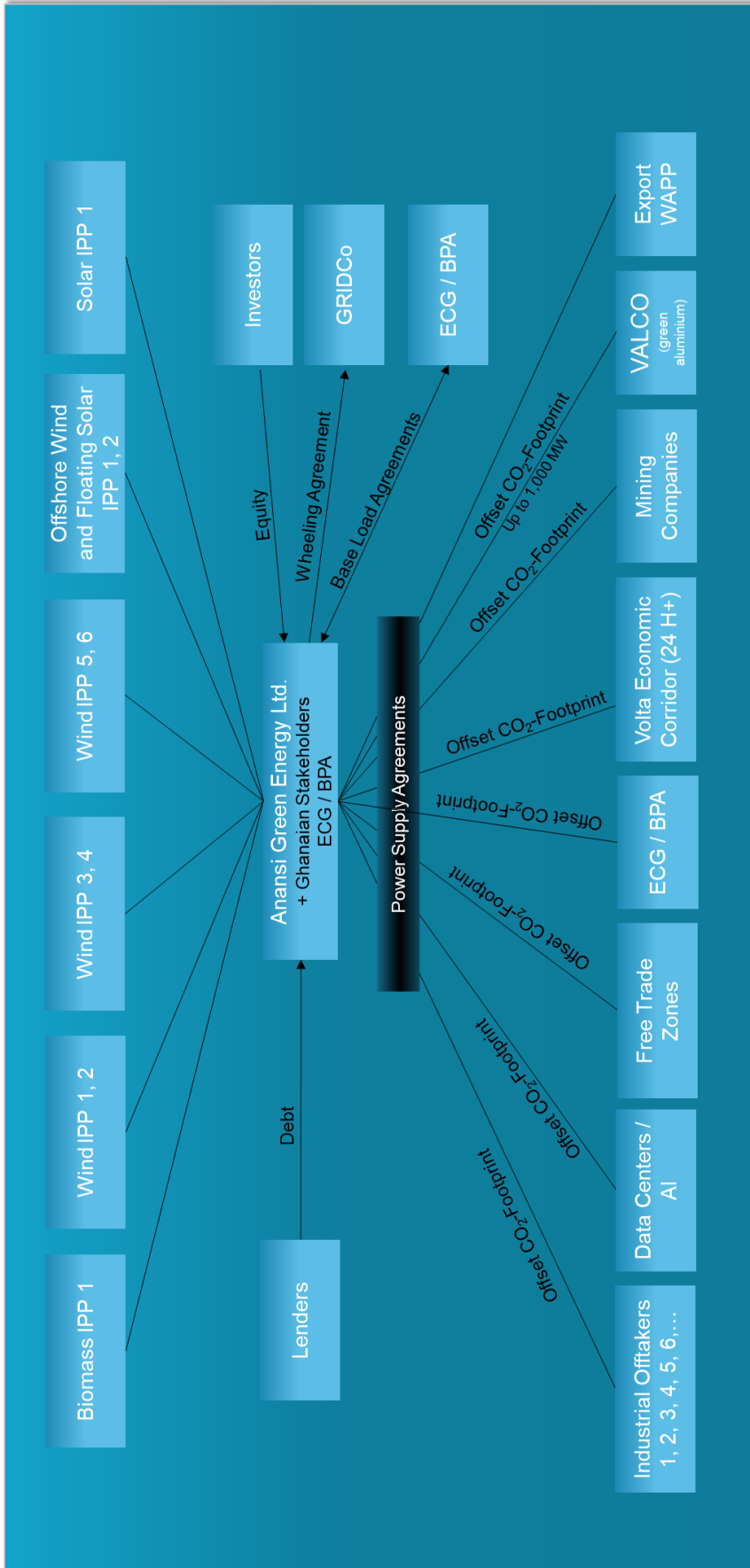
- Especially the dependence on the timely delivery of gas, depending on financial resources to pay for it, led to increased load shedding in the country in the past months; this brought back the dark times of Dumsor under the previous NPP Government - immediate actions are required, which must be undertaken by the visionary new NDC Government.
- During the past 10 years, no single additional MW of power was installed in the country under the NPP Government, and no substantial new generation plants are in the planning or implementation phase.
- According to different independent reports, the country will plunge into an even deeper power crisis in the years to come with generation and supply deficits of more than 1,000 MW already in the very short term. Energy deficits will increase on a yearly basis.
- Further conventional IPP's are not possible due to ongoing challenges with existing IPP's and the indebtedness of the power sector of more than 2 bio USD as per today.
- ECG / VRA and the Government will not be able (or willing) to contract with IPP's with a "take-or-pay" PPA and with typical PCOA / GCSA support. New structured PPA's on a "take-and-pay" basis must be the standard.
- Power generation needs will continue to increase notwithstanding the challenges of the power sector.
- A new structure model will be required to allow a diversification of the energy sector towards a drastic increase in renewable energy sources which will be implemented without impacting on public sector borrowings or IMF imposed restrictions - NEK's renewable energy platform **Anansi Green Energy** will be the instrument to do so.
- The implementation of new renewable energy projects in Ghana will also require the support of institutions such as World Bank, IMF, IFC, AfDB, AFC and other financial facilities who will play a pivotal role in the financing structure of the wind projects in Ghana.



1.3 ABOUT ANANSI GREEN ENERGY LTD.

- The renewable energy platform Anansi is the new SPV in Ghana with a number of specific partners.
- Discussions with Ghanaian stakeholders to become a partner in the platform are ongoing; potential candidates would be ECG, VRA, BPA or GNPC. Stakeholders have confirmed that they would wish to play a role in the platform - (a) by providing baseload energy, (b) by being an off-taker from the platform for green energy and, possibly, (c) by becoming a shareholder in the platform on agreed terms.
- Major industrial / power funds and investors from abroad will play a role in the equity of the platform, such as Savannah Energy, Taqa, AMEA Power, Global South Utilities, oil and gas trading companies, Climate Fund Managers, Green Climate Fund, Norfund and others.
- The platform will source debt from typical DFI / commercial lenders, who have already expressed their interest in doing so.
- The platform will be a “captive” industrial power generator, which produces its own green energy from the renewable energy projects acquired and selling capacity / energy directly to ECG / BPA / VRA and to large industrial off-takers, such as for example mining companies, steel manufacturers, cement producers, refineries, other large industries, etc. and also go for export in the future.
- The carbon savings resulting from this initiative will be huge; the green certificates can be used to make Ghana fulfil its NDC's, to reduce the CO₂-footprint of involved entities such as ECG, GNPC, VALCO and others and to also showcase the pioneering role of Ghana to combat climate change.
- The resulting green certificates can then also be internationally traded based on the bilateral agreement signed between Switzerland and Ghana in 2020, among others.





Organizational Structure of Anansi Green Energy Ltd.



1.4 GHANA'S NATIONAL DETERMINED CONTRIBUTIONS (NDC's)

- The Government of Ghana intends to implement its committed NDC's, fulfil the COP26, COP27, COP28 and COP29 obligations and to move towards net zero emissions.
- Ghana's former Government launched the country's new Energy Transition and Investment Plan during a Global Africa Business Initiative event in New York in late September 2023. One of the few good initiatives of the old Government.
- In there it is stated that the growth in Ghana in the coming years requires a substantial growth in new electricity capacity, dominated by wind and solar power.
- The document also expresses that the installed power capacity in Ghana will grow from actually around 5,5 GW to approximately 38 GW in 2040 and to 64 GW in 2045.
- This means that up to 2040, more than 7 times the today's installed capacity will be needed, while up to 2045, it increases to around 11 times. Where shall this urgently required power come from? Where is the space to install such huge additional generation capacities? They must be green, and they require therefore space, and one solution for space is offshore. NEK's offshore wind and floating solar plants do exactly fit into this model, also based on scientific studies regarding the use of offshore wind and solar in the Gulf.
- It is estimated that Ghana requires until 2030 additionally 5,000 of electric power supply compared to 2025 and more than 14,000 additional GWh/year of electricity. Where shall this come from if not from renewable sources?
- Investments in fossil power plants will in the future most likely no longer be financeable and therefore, they are no option for the country already in the short term.
- The only solution, which will also be completely in line with Ghana's NDC's obligations, is to switch from outdated, very expensive, climate damaging and unsecure fossil plants towards net zero emissions, pushing for large renewable energy facilities.
- This can be achieved by quickly developing and implementing large scale renewable energy power plants such as solar and wind - onshore and offshore.



- NEK has the capacity to do so, and by operating renewable energy plants in Ghana, the urgently required diversification of the energy sector can quickly start.



2 NEK'S DEVELOPMENT, IMPLEMENTATION AND OPERATION ROADMAP

2.1 WHY DIFFERENT PILLARS ARE REQUIRED

Our roadmap builds its strategy on different pillars, which will be described further down. It is required to drive wind energy innovation in Ghana onshore and offshore and therefore, NEK's wind energy pipeline will contribute heavily to the future industry development of the country.

2.2 PILLAR 1: INCREASING POWER DEMAND IN GHANA AND ABROAD

Actually, the installed power capacity in Ghana is around 5,5 GW. It is anticipated that due to the quick extension of the industry sector in Ghana under the new NDC government (24 hours economy), GDP will grow over the coming years exponentially, what means that also the electricity demand is quickly growing. Estimations state that every year, additionally 1,0 - 1,5 GW of electrical power generation facilities must be added to the national mix. In addition, also the electricity demand in neighboring countries will quickly increase, which also must be covered. This is a huge chance for Ghana to export more power via the WAPP system abroad if available, making Ghana to be the largest electricity hub in West Africa.

Under the new NDC Government, a 24-hour economy system is anticipated. In addition, large consumers of electricity will be expanding or newly settling in Ghana, such as the new VALCO, mining companies, steel manufacturers, cement producers, GPHA, GNPC, additional refineries, desalination plants, new data centers, AI infrastructures, Black Volta Corridor, and so forth. Also, the energy consumption of the population will increase drastically, and the power requirements abroad are huge.



AngloGold Ashanti: Iduapriem, Ghana



It is a fact that all figures available indicate that Ghana requires from 2025 onwards a yearly additional installed power generation of 1,0 - 1,5 GW (1,000 - 1,500 MW) to satisfy all demands and to provide for a safety margin for all eventualities and climate change consequences for the hydropower facilities.

Question: Where shall this come from?

Investments in fossil power plants are no longer easy to acquire. Moreover, the country has to fulfill its climate goals. Having this in mind, the only way forward for Ghana (and all other countries in Africa as well) is to go after the implementation of large-scale renewable energy projects. It is required that thousands of MW of solar and wind power facilities will be online urgently. No more time can be lost, urgent action is a must. All these arguments point to the solution that Ghana must do whatever possible to quickly bring into operation Renewable Energy Plants. NEK together with Anansi Green Energy has at least a portion of them available and ready for construction.



AngloGold Ashanti: Head Gear at Obuasi, Ghana

2.3 PILLAR 2: INVOLVEMENT OF FINANCIAL INSTITUTIONS

There is a lot of movement in the international financial sector allowing money influx into new renewable energy projects in Africa. Institutions such as World Bank, IMF, IFC, AfDB, KfW, DEG, USAID and others are ready to contribute substantial amounts of money to the energy transition. Respective programs are under way. NEK's projects in Ghana have the backing of these financing institutions and therefore, Ghana can count on the support of them. However, respective negotiations with these financing institutions are required.

The investment volume for the construction of NEK's 6 onshore projects is around **USD 1.8 - 2.0 bio**, including BESS and grid reinforcements. This money can easily be raised conditioned that Ghana does clearly support NEK's wind energy pipeline politically. There is absolutely no requirement for the country to provide any guarantee, PCOA, sovereign guarantee or similar. The whole financing package will be raised by NEK's consortium under Anansi Green Energy.



2.4 PILLAR 3: FAR ADVANCED ONSHORE WIND DEVELOPMENTS

NEK's 6 onshore wind farm projects do all sit on open flat land located between Prampram and Ada East. They bear the following names:

- Wind Farm **Konikablo** - up to 335 MWp installed capacity
- Wind Farm **Koluedor** - up to 205 MWp installed capacity
- Wind Farm **Togbloku** - up to 300 MWp installed capacity
- Wind Farm **Madavunu** - up to 230 MWp installed capacity
- Wind Farm **Amlakpo** - up to 245 MWp installed capacity
- Wind Farm **Ayitepa** - up to 250 MWp installed capacity

The wind farm projects have reached a far advanced development stage with long year wind measurements completed, land secured, EPA permits issued, bird and bat studies, GCAA permit issued, Construction Licences issued by the District Assemblies, Re-zoning completed for proper construction zones, grid access secured, road study completed, geotechnical work undertaken, and so forth. The development has been conducted by applying the full comprehensive standards from the World Bank, IFC and other international institutions, fulfilling all required obligations.

Missing for the complete permitting stage are the required licences from the Energy Commission, which could not have been obtained so far due to the Moratorium for the issuance of new licences, which was put in place by the former Ministry of Energy.



Boundary demarcation with the aim of setting out the project perimeter in the field within one of NEK's wind project areas, Ghana





Project areas of the planned wind farms by NEK in Ghana



All the projects have the full support of the local communities and population, and people are wondering why construction did not start long ago.

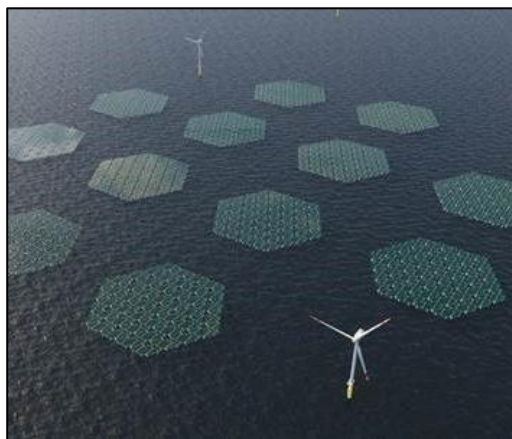
The wind farms will be connected at Sege to the 161/330 kV grid of GRIDCo, which also makes part of the WAPP grid system that is linking all surrounding countries of Ghana and therefore also fits for the export of electricity.

By sitting on these 6 wind project locations, it can be stated that most of the good wind locations are occupied by NEK's projects, leaving behind just a few minor places where eventually other land-based wind projects with a very limited number of turbines and much lower wind speeds could be developed. This, however, would last at least 5 - 6 years or more.

NEK's wind projects have obtained valid offers from different wind turbine manufacturers for the delivery of wind turbines of the latest technical generation, offers for the complete transportation of the equipment from the manufacturers factory by ship to the port of Tema and from there by heavy load camions onto the site, EPC offers, and BoP offers, including full scale operation maintenance proposals for up to 20 years from both, European manufacturers and China based manufacturers.

2.5 PILLAR 4: OFFSHORE WIND AND SOLAR ENERGY FACILITIES

Since the enormous increase of the use of renewable energy in the future in Ghana will face narrow limits in the very near future due to missing suitable locations, NEK has decided in 2021 to start the development of offshore wind projects, combined with floating offshore solar installations. After a long-lasting selection process, which was based on multiple selection criteria, NEK has selected in close collaboration with Ghana Maritime Authority (GMA) two (2) locations for the further development of offshore energy undertakings: One is located off the coasts of Ningo, the other one off the coasts of Anloga. These projects will allow the production of up to 3,000 MWp of installed wind power and up to 600 MWp of floating solar power. Once operational, the facilities also would be able to provide GPHA with green hydrogen, green ammonium and green diesel for the increasing demand for such fuels. And these projects also will contribute to cover the green energy demand of the new VALCO activities scheduled to come online in the years to come. And between the installed wind turbines, facilities will be provided by NEK for free in favor of the local fisher folks to grow fish farming there.



It, however, must be emphasized that the complete development of these offshore wind and solar facilities will take several years and only will be completed around the year 2030.





2.6 PILLAR 5: STRENGTHENING OF THE LOCAL INDUSTRY THROUGH GREEN POWER

The renewable energy transition, which can't be stopped anymore, is creating a green jobs boom. Clean energy is moving towards centre stage in the global energy system - and as its importance rises, a new clean energy economy is emerging. This also does apply to Ghana and the whole ECOWAS region.

Clean electricity accounted for around 85% of new capacity additions to the world's electricity system in 2024, and electric vehicles for around one out of five cars sold globally. At the same time, global investment in clean energy manufacturing is booming, driven by industrial policies and market demand. Employment in clean energy jobs exceeded that of fossil fuels in 2021 and continues to grow very quickly every year.

Quantifying the expanding role of clean energy in the economy is therefore essential to fully understand the stakes and momentum behind energy transitions. Clean and green energy such as wind or solar power forms the basis for any green industry. Also Ghana cannot hide itself from this world trend.

More and more players in the industry sector are asking for the switch from outdated, expensive and polluting fossil electricity production to green power, power, which NEK's wind farms will produce in the future.



Green Hydrogen

- It is widely assumed that Green Hydrogen will be the energy source of the future - this will also apply to West Africa
- Green Hydrogen must come in order to be accepted as being green from 100% renewable sources - only NEK has those projects ready for implementation as per today and tomorrow in Ghana
- Green Hydrogen facilities will be installed both, onshore in the Tema Free Trade Zone and in the Dawa Industrial Zone, and at sea within the two offshore wind park and floating solar locations
- Green Hydrogen to be used for national consumption and for export
- Green Hydrogen will be the game changer for Ghana by producing green fuels for shipping and aviation, agriculture, seawater desalination plants and a lot of other industrial applications - to make Ghana become the African pioneering country for energy transition
- Green hydrogen can be used for the production of other green fuels like green ammonia and green methanol for the shipping industry - GPHA seems to be very interested

E-mobility

- Electric vehicles are widely used in a lot of countries worldwide already - in Africa and also in Ghana, this is not yet the case
- The penetration of electric vehicles in the transportation sector in Ghana and other West African countries will start however very quickly - they will push-out conventional fuel driven vehicles soon
- The use of electric cars only is environmentally friendly if the required electricity comes from clean sources such as renewable energy. Otherwise, it is just a shift in the pollution chain - NEK with its wind and solar energy projects has the solution for this
- Therefore, NEK's renewable energy projects are a condition precedent for the clean use of electric vehicles in Ghana.

Battery Energy Storage Systems (BESS)

NEK's wind farms will be combined with so-called Battery Energy Storage Systems (BESS). Energy storage is critical to decarbonizing the power system and reducing greenhouse gas emissions. It's also essential to build resilient, reliable, and affordable electricity grids that can handle the variable nature of renewable energy sources like wind and solar.



There are different energy storage solutions available today, but lithium-ion batteries are currently the technology of choice due to their cost-effectiveness and high efficiency.

BESS are rechargeable batteries that can store the energy produced in NEK's wind farms and discharge it when needed. BESS consist of a series of batteries and will also be used to balance the electric grid, provide backup power and improve grid stability. The systems are flexible, have a scalable design for efficient energy storage and will contribute to the whole electricity network of Ghana.

The application of BESS in Ghana will be undertaken in close collaboration with GRIDCo, ECG and BPA. Institutions such as KfW and others have already expressed their interest in coming in for financing such solutions.

2.7 PILLAR 6: CORPORATE SOCIAL RESPONSIBILITY (CSR)

CSR is the idea that businesses should operate according to principles and policies that make a positive impact on society and the environment. Through CSR, companies make decisions driven by financial gain and profitability, and the impact of their actions on their communities and the world at large. CSR goes beyond legal obligations: by voluntarily adopting ethical, sustainable and responsible business practices, companies seek to deliver benefits to consumers, shareholders, employees and the society.

Through NEK's CSR initiatives, we work in order to limit environmental impact, contribute to solving societal problems (such as poverty and inequality) and ensure our brand identity reflects our values. NEK has followed these principles since the beginning of its wind project developments in Ghana in 1998 and has invested up to now substantial amounts of money in CSR projects. NEK envisages for the future additional CSR measures:

- The projects will fund training and education institutions in the project areas for health, agriculture and social benefits; this will attract a lot of young people
- A special project fund will contribute on a yearly basis with more than \$ 2 m per project to support the local population per year; the fund will be financially structured via escrow accounts
- NEK will select young people and send them for training purposes to foreign universities to be educated in selected professions, mostly limited to green industry processes and green energy only
- The rightful owners of the land where the wind farms will be constructed do lease the plots for the turbines to NEK for a yearly defined rental fee - NEK does not purchase the land, the owners keep their treasure



- The land is just leased and belongs to the traditional owners also once the wind farms will be operational; agriculture activities will continue to be possible in the areas between the turbines
- The projects will be implemented in regions where there is a need for social and industrial development; the population is eagerly awaiting the start of the projects
- The projects will generate immense employment opportunities both locally and regionally
- The projects will use local contractors whenever possible

Apart from that, it is envisaged that under the condition, all planned wind farms will be approved by the Ghanaian authorities, a local steel tower factory will be established by the selected turbine manufacturer which will produce the required high wind turbine towers locally. Hundreds of jobs will be created like this in the factory, while thousands of additional jobs will be created for component suppliers and subcontractors.



Impressions of some of NEK's CSR activities in Ghana





For more than 10 years now, NEK has engaged a team of Community Liaison Officers, who run a field office at Ayitepa, Ningo-Prampram District, Greater Accra Region, and who are in constant contact with the local population, the District Assemblies, the communities and the farmers. They are the contact point for any questions, concerns, inputs and enquiries related to NEK's wind farm developments there.

Should you have any doubts about the above? Just go out, head to our sites and ask the population and the farmers there. They can confirm NEK's attitude.

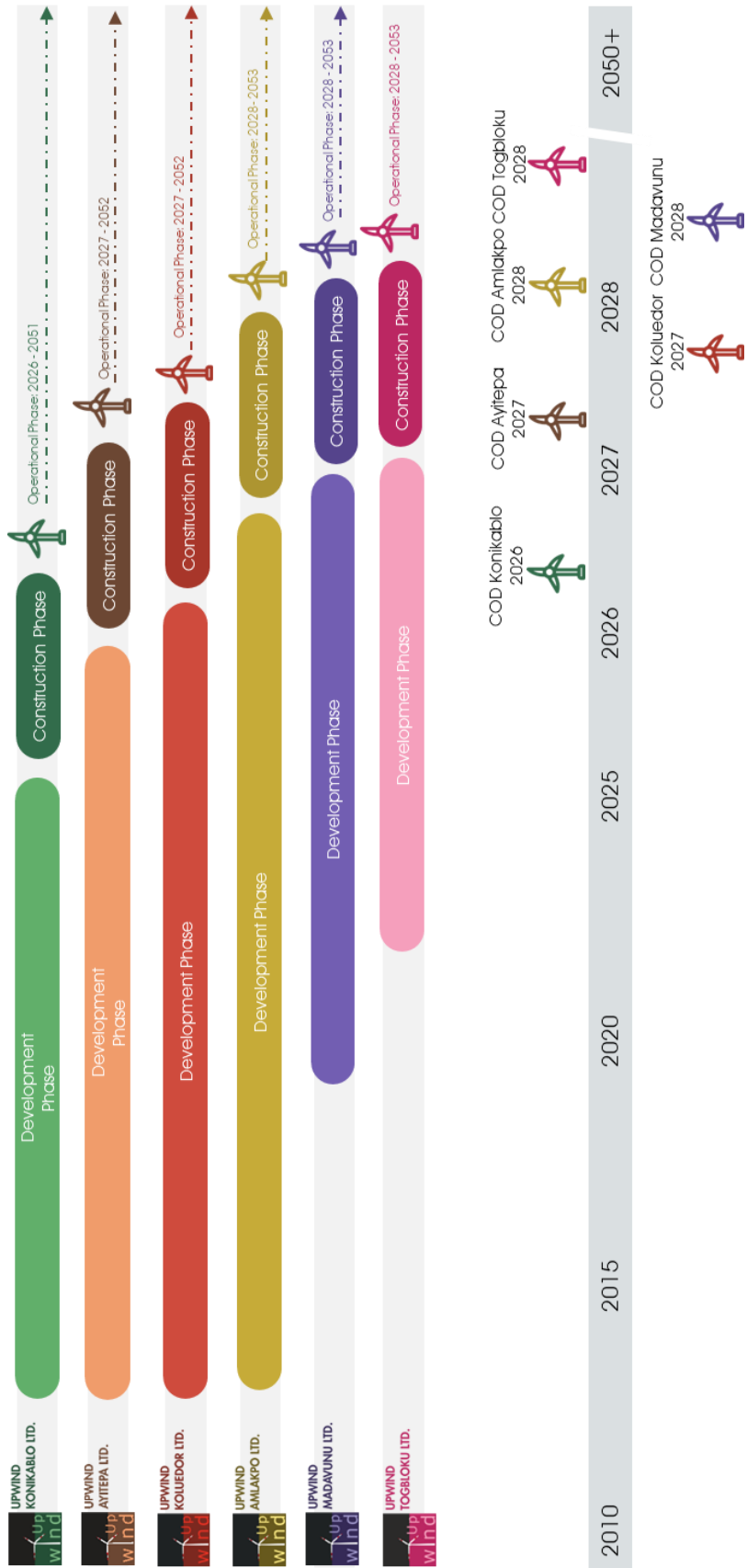


3 INDICATIVE IMPLEMENTATION SCHEDULE

3.1 LAND BASED WIND PROJECTS

After the final permits for the projects are received, the construction of the onshore wind farms will happen in phases. It is technically wise not possible (and advisable) to construct such large projects in parallel. Therefore, the wind farms will be constructed in phases and become operational one after the other, starting from mid-end 2027, if NEK becomes the “green light and go-ahead” from the new NDC Government of Ghana quickly.





Development Phase: Until project is ready for construction and Financial Close is reached

Construction Phase: 18 - 24 months per wind farm

COD = Commercial Operation Date

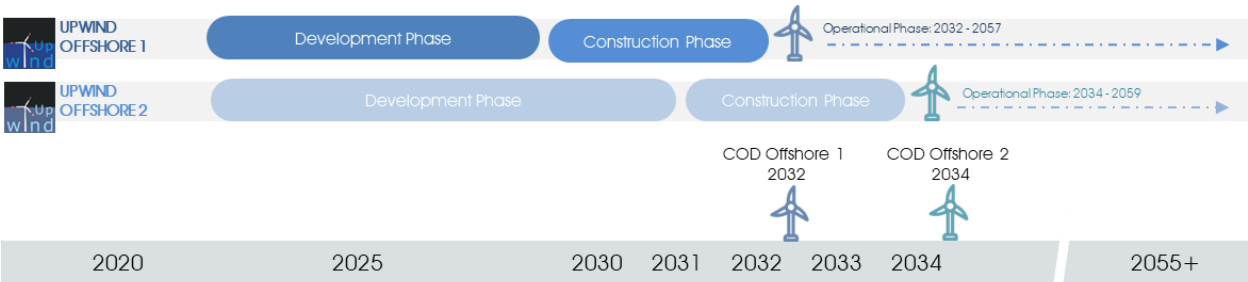
Project Implementation Schedule for NEK's planned Onshore Wind Farms





3.2 OFFSHORE WIND AND FLOATING SOLAR PROJECTS

Once NEK receives exclusivity and clearance from the Ghanaian authorities to develop its 2 offshore sites, we can reserve the required development funds and manpower to develop these projects applying the highest international standards. The following estimated schedules do apply:



Project Implementation Schedule for NEK's planned Offshore Wind and Floating Solar Farms

For offshore wind and solar projects, the development phase takes substantially longer than for land-based projects. Also, construction is more complicated than on land and takes longer.

If NEK can continue with its development efforts quickly, it can be estimated that the first offshore wind and solar farm in Ghana is operational by approx. 2032.



4 OUTLOOK

NEK together with its partners and investors are ready for the energy transition of Ghana. NEK can contribute substantially to this goal by providing via its renewable energy platform Anansi Green Energy reliable, cheap, never-ending, sustainable and home-made electricity. Grown inland, without any dependence on imports from foreign countries or exchange rate issues.

What NEK requires is just the full support of the new NDC Government, nothing else. Then, NEK will deliver all what has been promised, even more than that. For the benefit of Ghana, a country blessed by God.

Let's work together and quickly move in the right direction and commit finally to renewables! Ghana and its population deserve this more than ever.

Thank you!

NEK UMWELTTECHNIK AG

A handwritten signature in blue ink, appearing to read 'Dr. Kapp', is positioned above the printed name.

Dr Christoph Kapp

(Chairman)

