



# CRGE HIGHLIGHTS

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**CRGE Highlights** is a monthly newsletter of the Environmental Protection Authority of the Federal Democratic Republic of Ethiopia, focusing on disseminating the lessons learned from the implementation of Ethiopia's Climate Resilient Green Economy Strategy (CRGE).

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## Announcement ...

A Capacity Development Plan for the Sectoral Reduction Mechanism (SRM), i.e. the policy vehicle by which the CRGE strategy will be implemented, is underway.

This capacity development plan encompasses EPA and the sectoral ministries and regions that are involved in CRGE implementation. It also gives emphasis to building the capacity of service providers in the environmental management/climate change sector in Ethiopia.

The CRGE Highlights will feature an article on this important capacity development initiative and plan in its next issue.

## Implementing the CRGE: Engaging the Private Sector

□ Legesse Gebre-Meskel | Lead Technology Transfer Expert | EPA

*"....Given that the city of Addis Ababa will have an electric Light Rail Transit system in the next few years, Government of Ethiopia's efforts in support of the introduction of electric taxis (e-taxis) may result in a fully electric commuting experience within the city..."* Zewge Alemu, Director of Business Development, dVentus Technologies.

This article is based on a question and answer session with Ato Zewge Alemu and Ato Daniel Abraham of dVentus Technologies, a global technologies firm with a strong presence in Ethiopia. dVentus technologies was founded by Daniel Gizaw, a prominent engineer with extensive experience in the automotive industry in the United States. The firm focuses on designing green products and has earned patents for various energy efficient products. This includes a magnetic/brushless generator that, with minor modifications, can be used as the motor for the electric car/taxi that has been introduced by the Government of Ethiopia, with dVentus' support.



*Legesse Gebre-Meskel, lead technology transfer expert at EPA (left), with dVentus' Daniel Abraham, electrical engineer and lead expert on the electric taxi initiative (center) and Zewge Alemu, Director of Business Development.*

### **What attracted dVentus to invest in green technologies in Ethiopia?**

dVentus founder Daniel Gizaw wanted to contribute his part in strengthening the engineering faculty of the Addis Ababa University while utilizing Ethiopian engineers for design support for his US company Danotek, which at the time (in 2005) was one of the few higher-level engineering school in the country. In the meantime, the Ethiopian economy has been growing steadily and the country has set an ambitious target of attaining middle-income economic status and becoming a climate resilient green economy by 2025.

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## Sector Focus: The Water and Energy Sector CRGE Unit

☐ Alemayehu Tafesse | Head, Environmental Impact Assessment and Social Development Office | MoWE

The Ministry of Water and Energy (MoWE) has established a CRGE unit coordinated by the Environmental Impact Assessment and Social Development Office. The CRGE unit's seven members are drawn from the different directorates and subsectors of the Ministry. It is working to upgrade and create a permanent unit that is responsible, strong and dedicated, through assigning and hiring skilled experts to work on full-time basis. So far, the unit is undertaking the entire coordination, facilitation and reporting of energy- and water- related CRGE initiatives. It is also assigned to work as focal point for CRGE. The unit oversees and coordinates all the activities of the CRGE initiatives, and participates as a member of the National CRGE Technical Committee convened by EPA. The unit implements the CRGE initiative from Federal to Regional level, through the existing government structures going down to the grassroots level or Kebeles. It does this, using the existing links to institutions at the grassroots level, i.e. regional, zonal, Woreda and Kebele offices, which already have working relation with the different directorates of the Ministry.

The MoWE CRGE unit was instrumental in the development of the energy relevant aspects of the green economy component of the CRGE Strategy, which depended on the input and contributions of the Ministry's directorates. Currently these directorates are also undertaking several activities in identified priority areas, including developing and promoting improved cook-stoves, developing and scaling-up renewable energy resources such as geothermal and wind energy, undertaking baseline surveys on energy consumption and a biomass inventory, developing bio-fuels, replacing diesel pumps used in rural water-supply schemes with renewable energy, institutional strengthening and capacity building, and off-grid small-scale hydro development.

The Energy Sector CRGE program has two main priority initiatives that will be fast tracked: the efficient-improved cook-stove program and scaling-up renewable energy program (SREP). Both programs have already started and some milestones have been achieved. A Program Document (PD) on improved cook-stove development and promotion has been prepared. In the context of the SREP program the focus is mainly on sustainably developing the country's available high- potential renewable energy sources, including hydropower, wind and geothermal energy.

Studies on geothermal and wind energy have been done and activities are progressing based on the already developed CRGE investment plans. Another important ongoing initiative is Energy+, a partnership green energy programme between the governments of Norway and Ethiopia, which focuses on improving energy access. A PD has also been developed for Energy+, and the program is underway with the participation of several directorates of the Ministry working in their specialized areas.

There is some progress with the implementation of CRGE initiative within MoWE, even though there are still some challenges. The challenges include the general lack of expertise to deliver on programs/projects, lack of synergy and coordination in the cross-sectoral CRGE initiatives, and lack of continuity from past programs/projects. The success of implementing the CRGE in Ethiopia and accessing the benefits thereof, will be driven by the coordination at the Federal level by the Environmental Protection Authority (EPA), sourcing and leveraging finance to scale up implementation, the alignment of the CRGE to the broader economic plan of the government (e.g. the Growth and Transformation Plan), the cross-fertilization of ideas by the different sectors involved, knowledge and skill transfer and dissemination, and the participation of various CRGE stakeholders.

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For dVentus this meant that what started as an initial engagement to support technical capacity within the University and bring design and development support for a US company offshore to Ethiopia, has evolved to become a strong presence in a country with a potential market for its core green technology products – such as wind turbines, smart-grid technologies (smart meters), power generation solutions and electric vehicles. Based on projected needs, in Ethiopia the wind turbine sector alone is potentially a 2 Billion USD business with dVentus products capturing potentially 20% of it. However, dVentus has remained close to where it had started in Ethiopia and still maintains strong links to universities and engineering schools throughout the country. In fact, there is a strong internship programme for engineering students at dVentus and most of the technical employees were part of this internship programme. Currently we employ over 20 junior and mid-level professionals (engineers), who have joined the company from universities across the country. We also have projects in several sectors in Ethiopia including wind energy, smart-grid technologies (smart meters) and electric vehicles.

### ***What support did you get from the government in starting up dVentus in Ethiopia?***

Engineer Daniel was able to meet the late Prime Minister to discuss the local manufacturing of wind turbines in Ethiopia. The current Prime Minister H.E. Ato Hailemariam Desalegn, visited us and has been very supportive in his previous capacity as Deputy Prime Minister Foreign Minister and the chair of the high-level government committee on technology in the Prime Minister's office. H.E. Ato Tadesse Haile, State Minister at Ministry of Industry, gave us strong and sustained support. The Metals and Engineering Corporation (METEC) Director General, led a delegation of his senior management and has shown interest in working with dVentus on multiple projects. We have also had support from the MOFED in the form of tax privileges and incentives. EPA has been extremely supportive in taking forward the electronic taxi initiative that is currently ongoing.

### ***What is an 'electric taxi', particularly in the Ethiopian context? How does it compare (considering technology and price) to the existing public transportation vehicles, including the 'Bajaj'\*?***

*\* In the Ethiopian context, the Bajaj is a three wheeled vehicle that is widely used for transporting people. The vehicle gets its name from Targow Bajaj, the manufacturer of the vehicle*

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The electric taxi is essentially a vehicle/car that uses electrical energy for its operation and has no Green House Gases (GHG) emission. This is a fundamental difference with the so-called 'Bajaj'. However, you have raised a good question since most people compare the e-taxi with the 'Bajaj' which is currently being widely used, as a means for transport and access to neighborhoods or 'sefers' that are situated further from a main road. This is a fair comparison in the sense that the e-taxi may also be required to provide a comparable services and it is in due consideration of this that we had undertaken a detailed market survey. As it stands, the e-taxi is by far more expensive than a 'Bajaj'. This has to do with the economies of scale since the e-taxi is not being commercially produced. Moreover, we had been forced to incur additional cost at this phase of production, since we had to put a second battery cell as a back-up, anticipating that we will only have a few charging stations for the e-taxis at this point. However, it is important to note that the e-taxi has very little running cost and can be a good investment in the long-run. We also intend to take some optional features of the e-taxi to make it more competitive, in terms of the price to buy the vehicle. Regarding design and layout one can clearly see that the e-taxi has four wheels and hence it is more comfortable and stable. Moreover, regarding technology the main difference is the fact that the e-taxi uses electricity as energy and has no GHG emissions.

However, larger scale production and assembly will be a long-term engagement and will depend on how this initiative is taken forward by the EPA and the Government of Ethiopia.

***How is operational support for e-taxis (for example charging stations) being provided by government and other stakeholders?***

The EPA was instrumental in ensuring that this pilot initiative got all the inputs and support it required. To this end, the Government has availed the charging stations that were required for the successful implementation of this pilot exercise.

However, in the long-run there is a need to develop the policy instruments and incentives that would strengthen the e-taxi market in Ethiopia. While the e-taxis make strong environmental sense at this point, there is still a need to put the right policy instruments to ensure that they make business and economic sense.

***In the future, how prominent do you anticipate e-taxis to be in the public transportation mix of the city of Addis Ababa?***

I will not be able to say much on this, particularly since the success of the e-taxi as a mode of transportation will not only depend on the design and manufacturing aspect of the work that we as dVentus are engaged in, but also on the effectiveness of the policy instruments put in place. But given that the city of Addis Ababa will have an electric Light Rail Transit system in the next few years, the success of the e-taxis as a mode of transportation may result in a fully 'electric' commuting experience in the city, which will highly contribute to the Government's ambition of building a climate resilient green economy.



The electric taxi (left) and the 'Bajaj' (right)

***What is your involvement in the e-taxi production and assembly?***

The current e-taxi project is a pilot scale assignment to design and supervise the production of an e-taxi. dVentus was able to deliver 6 such vehicles to the Government of Ethiopia/EPA and an additional 6 vehicles will be arriving soon. These vehicles are on their way to be tested in selected cities in the country, including Hawassa, Mekele, Bahir Dar and Adama. Feedback from this will help us to improve the vehicles in terms of their efficiency and customer needs, while taking into account the need to make them competitive. In the meantime, we have also developed an improved prototype of the vehicle, which can be produced and assembled at a larger scale.



A young engineer at dVentus working on the electric taxi prototype (left). A close-up on this prototype is also seen (right)





## Events: EPA's participation in a government-wide sports competition

A government-wide sports competition is currently ongoing. In this competition, the Federal Environmental Authority is participating in men's soccer and women's volleyball.

The score for the men's soccer matches were:

- Environmental Protection Authority versus Ethiopian Sport Commission; 1 – 2
- Environmental Protection Authority versus Ministry of Foreign Affairs; 6 – 3
- Environmental Protection Authority versus Ministry of Urban Development and Construction; 2 – 3
- Environmental Protection Authority versus Ministry of Defense; 1 - 2
- Environmental Protection Authority versus Ethiopian Roads Authority; 1 – 1



*The EPA soccer team*

The score for the Women's volleyball matches were:

- Environmental Protection Authority versus Ministry of Education; 3 – 0
- Environmental Protection Authority versus Ethiopian Sports Commission; 0 – 3
- Environmental Protection Authority versus Ministry of Women and Children Affairs; 3 – 0



*The EPA volleyball team (in the front row)*

We wish the EPA team all the best in its future matches!

## World Environment Day 2013: Recognizing the contribution of partners for the realization of the CRGE vision

☐ Belete Geda | Director of Awareness and Education | EPA

The Federal Environmental Protection Authority (EPA) in collaboration with the United Nations Environment Program (UNEP) organized the 2013 World Environment Day in Addis Ababa, Ethiopia with the theme "Caring for Nature for Food Security". This year's World Environment Day was commemorated with a variety of activities that included a tree planting ceremony, speech and panel discussion, and an award ceremony to recognize institutions and individuals that are contributing to the realization of the Climate Resilient Green Economy (CRGE) vision of Ethiopia.

During the gathering at the Dilachin Square (opposite the main Post Office) in Addis Ababa, which was graced by dignitaries from government, international organizations, foreign embassies, civil society and private sector participants, Dr. Tewolde Berhan Gebre Egziabher, Director General of EPA, spoke on the synonym of the world and the environment. He pointed out that the environment is what sustains life, even though we unconsciously do a lot of things that are to its detriment. He also elaborated on Ethiopia's vision towards becoming a climate resilient green economy, setting the context for the presentations by sectoral ministries on their activities and efforts in the implementation of the CRGE initiative.

Representatives from the sector CRGE units also highlighted on the activities they are currently carrying out within their sectors as part of the CRGE implementation. The Ministry of Water and Energy's presented on its activities in implementing the fast track energy efficient cook stove investment plan and the scaling up of renewable energy source deployment in the rural and semi-urban regions of the country that are off the national electricity grid. On his part, the Ministry of Urban Development and Construction representative on the occasion pointed out that the ministry is increasing the work done in the areas of solid waste management and the greening of cities, since increase in urbanization affects the lifestyles of people in terms of their consumption and waste management.

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The question and answer session that followed the presentations showed the interest of the public on the participation of the youths in the CRGE activities, making sure that World Environment Day is not only celebrated in Addis but should also be celebrated in the regions and rural areas to create awareness of the need to protect our environment at the local level.

The award ceremony was held to recognize development partners that are supporting the implementation of the CRGE vision. The awards were presented to a number of Embassies, including Norway, Denmark, Sweden, the UK, South Korea, Ireland, Japan,

Austria, and Germany. In addition, Mrs. Katrine Vestbøstad, Counselor for Climate Change, Environment and Clean Energy at the Royal Norwegian Embassy in Addis Ababa, received a special prize for her efforts in bringing forward the CRGE partnership between Norway and Ethiopia.

The World Environment Day is an annual event that takes place on June 5 every year. The WED aims at a global day for positive environmental action and is a good medium to raise global awareness of everyone's responsibility to become an agent of change towards protecting our environment for the present and future generations.



*Dr. Tewolde Berhane Gebre Egziabher, Director General of EPA, planting a tree (left) and delivering a speech (center) during the WED celebration in Addis Ababa. Katrine Vestbøstad (right), Counselor for Climate Change, Environment and Clean Energy at the Royal Norwegian Embassy in Addis Ababa, with the award she received during the WED celebration for her efforts in bringing forward the CRGE partnership between Norway and Ethiopia.*

## DISCLAIMER

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