

# R20 AUSTRIAN WORLD SUMMIT SPECIAL REPORT 2018



**SUCCESS FACTORS AND POLICY  
RECOMMENDATIONS –  
FOCUSING ON BIOMASS &  
WASTE TO ENERGY**



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## 1 INTRODUCTION

The international climate change process has a dramatic effect on societies and economies of industrialized nations, but even more on developing and emerging countries. These countries play a crucial role in the implementation of the United Nations Paris Agreement on Climate Change and the UN Sustainable Development Goals (UN SDGs). Companies and organisations can make a significant contribution through their technologies and knowledge, to realise sustainable projects on site.

Therefore, brainbows works with the support of ADA (Austrian Development Agency) and together with the Austrian Economic Chambers (WKO AUSSENWIRTSCHAFT AUSTRIA) on the Post Paris Navigator (© brainbows gmbh). This Post Paris Navigator is a tool with which to identify and match relevant actors and to facilitate successful entries into new markets for companies. Another part of this project is to prepare and deliver information concerning the global climate change process, political framework conditions, and success factors of best practice projects.

The overall goal is to establish an active community for networking, to share valuable knowledge and experiences, as well as to speed up the implementation of projects. This white paper comprises ten selected projects with a focus on biomass & waste to energy that were part of the international climate conference R20 AUSTRIAN WORLD SUMMIT, which took place on May 15, 2018 in Vienna ([www.austrianworldsummit.com](http://www.austrianworldsummit.com)). As an official outcome of the summit the white paper will also be integrated into the UNFCCC's Talanoa Dialogue.



*Demo Composting Plant in Oran, Algeria*

The R20 Austrian World Summit became a part of an institutional network of climate initiatives and a milestone on the road to COP 24 in Katowice/Poland and beyond. After COP 23 in Bonn and the One Planet Summit in Paris in 2017, the journey ahead goes from the R20 Austrian World Summit in Vienna to the Global Climate Action Summit in San Francisco (Sep. 12 – 14), the One Planet follow-up event in New York City (Sep. 26), the P4G Summit in Copenhagen (Oct. 19 – 20), the COP 24 in Katowice (Dec. 3 – 14) and many other events that will unite all actors involved in building a positive agenda.

### 1.1 Call for Best Practice Projects: Biomass & Waste

As part of the Post Paris Navigator, a call for best practice projects with the focus on biomass & waste to energy was carried out from the beginning of the year 2018 until February 15. The call aimed to reach companies and organisations which were actively involved in the implementation of sustainable projects in developing and emerging countries.

To trigger and identify best practices brainbows utilized:

- the R20 – Regions of Climate Action and brainbows network
- the Austrian Development Agency (ADA) network
- the WKO foreign trade offices (AußenwirtschaftsCenter)
- online channels (websites and social media channels of the R20 Austrian World Summit)

The submitted projects were screened before ten were selected as a best practice project. The participants were asked to identify success criteria during the submission of the project and the subsequent discussion. Finally, recommendations were identified and summarized in this white paper. The overall goal of the white paper is to share successful projects, find inspiration with which to influence the adaptation of framework conditions, and provide companies with critical knowledge concerning the development of new project ideas.

## 1.2 Selection Criteria for Best Practice

The call resulted in a wide range of different projects being submitted from across the globe. In order to be included on the best practice list, a submission had to be an exemplary energy related project and meet a number of selection criteria.

The following criteria covered a broad range of different aspects that we seek in a flagship project, with the aim of prompting others to follow their example.

- **Thematic Focus:** Assignment to the given topic, in this case the areas of biomass, waste management and waste to energy
- **Empowerment:** High priority was given to the aspect of „strengthening self-determination and self-responsibility of the participating states, administration and municipalities“
- **Local participation:** An essential criterion was the “inclusion and participation of local authorities in the project“. Where possible, the goals of the project needed to be supported by national strategies and institutional structures (proof of e.g. mandates letter)
- **Project maturity:** The criteria and project phases of the World Bank and the International Finance Corporation (IFC) were used to assess project maturity
- **Project monitoring:** Ongoing monitoring of the project process was also taken into account as a criterion
- **Social aspects & Inclusion:** Special consideration was given to projects that address and anchor social and societal aspects, as well as the issues of access and inclusion (focus on women, children, the elderly, people with disabilities or factors such as health problems, etc.)
- **SDG implementation:** Implementation of the UN Sustainable Development Goals (UN SDGs) is the basis for sustainable development at national, regional and international level and was therefore taken into account in the evaluation of economic, social and environmental aspects. Each of the following project descriptions refers to the respective addressed SDGs (as climate action was a prerequisite for the selection of best practices this goal – SDG 13 – is not stated separately)
- **Scalability:** The project should encourage imitation; viability of the business case and reproducibility were therefore essential criteria (the project should meet local requirements and ensure simple and cost-effective reproducibility of implementation and target achievement)
- **Innovation:** In addition, the degree of innovation of a project and the resulting opportunity to develop, analyse and evaluate new local business models on site were taken into consideration

On the next pages we present the top 10 best practice projects from the first call focusing on biomass and waste to energy.



The seventeen United Nations Sustainable Development Goals (UN SDGs) to transform our world

# SUSTAINABILITY PACKAGE FOR HOUSEHOLDS IN MEKI, ETHIOPIA



## Holistic project to improve life quality of the rural population

The project „Sustainability Package for Households“ was developed by the business platform “Klimaneutralitätsbündnis 2025” in cooperation with Caritas Vorarlberg. It will assist approximately 5,000 households in eight municipalities in Ethiopia over the duration of five years. The individual household situation should be improved by efficient cooking, solar-powered light sources, water treatment as well as agricultural and forestry education. In detail the total package for a household contains two efficient cooking stoves, vegetable seeds including vegetable growing training, tree seedlings, a solar-powered light source and „WADI“, a drinking water treatment device that is also powered by the sun. Within the operational time a total of 24,000 tonnes of CO<sub>2</sub> will be saved.



### Impacts and Benefits

The concept of the project focuses on the entire household and involves several measures. The realization will enable climate protection through saving CO<sub>2</sub>, while improving the life quality of the rural population, raising awareness for the issue and training the inhabitants.



- STAGE 1: Concept Development, Site Identification
- STAGE 2: Pre-Feasibility Studies
- STAGE 3: Feasibility Studies
- STAGE 4: Permitting, Financing, Contracts
- STAGE 5: Engineering, Construction, Operation

**Submitter:** Caritas and Vorarlberger Kraftwerke

**Location:** Meki, Ethiopia

**Website:** [www.klimaneutralitaetsbuendnis2025.com/projekte/gesamtpaket-fuer-haushalte-in-aethiopien](http://www.klimaneutralitaetsbuendnis2025.com/projekte/gesamtpaket-fuer-haushalte-in-aethiopien)

**Contact:** [Anna.Maierhofer@illwerke.at](mailto:Anna.Maierhofer@illwerke.at)



# MUNICIPAL SOLID WASTE TREATMENT PLANT IN MUMBAI, INDIA



## Mumbai's waste management market and working solutions

A municipal solid waste treatment system has been installed in Mumbai in order to help the rapidly growing Indian megacity manage its waste streams. 1,000 tons of waste are being delivered to the facility every day. The waste is sorted and the organic fraction (600 t/day; 185,000 t/year) is passed to the biological treatment plant of the Austrian company "Compost Systems". The waste is composted for a period of 8 weeks and further processed to receive a valuable compost that gains market value. The plant prevents approximately 90% of the waste from being dumped in landfills and saves 400,000 tons of CO<sub>2</sub> per year. This facility is currently the largest waste treatment plant in Southeast Asia that meets Western standards.



### Impacts and Benefits

Improper management of solid waste continues to impact public health, pollutes local water, air and land resources. Managing solid waste properly and composting organic waste helps nurture crops and results in a better agricultural yield. Decreasing landfilling and building sanitary landfills reduces ground and surface water pollution which can help provide cleaner drinking water.



**STAGE 1:** Concept Development, Site Identification

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**STAGE 3:** Feasibility Studies

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**Submitter:** Compost Systems GmbH

**Location:** Kanjur, Mumbai, India

**Website:** [www.compost-systems.com/referenzen/mumbai](http://www.compost-systems.com/referenzen/mumbai)

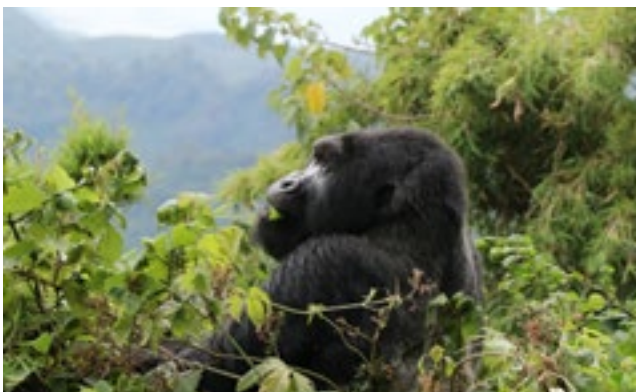
**Contact:** aurel.luebke@compost-systems.com



# VIRUNGA MOUNTAIN GORILLA PROJECT IN RUANDA

## Improving living conditions and habits through efficient cooking stoves

The Virunga Mountain Gorilla Project was developed by Likano and is a certified Gold Standard project to ensure its positive climate and development impact. This micro-scale project is carried out in the bordering municipalities around the Volcanoes National Park (Rwanda National Park). Through energy-efficient cooking stoves, the need for firewood for thousands of households will be significantly reduced, so the rainforest's unique ecosystem stays protected. Up to 50,000 cooking stoves will be distributed by the project over the next seven years, improving the living conditions for up to 250,000 people. At the same time it will protect the habitat of the endangered mountain gorillas. The project started early 2017.



### Impacts and Benefits

This project reduces the intensive use of firewood by optimizing the cooking process with efficient cooking stoves. To support economic development and in order to create regional jobs the cooking stoves are locally produced by the manufacturer Ruliba Clays Ltd.



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**Submitter:** Likano Project Development GmbH in cooperation with International Gorilla Conservation Program

**Location:** 4 Districts - Rubavu, Nyabihu, Musanze and Burera - around the Volcanoes National Park in Rwanda

**Website:** [www.likano.eu/en/virunga-mountain-gorilla-project](http://www.likano.eu/en/virunga-mountain-gorilla-project)

**Contact:** [ms@likano.eu](mailto:ms@likano.eu)





# DEMO COMPOSTING PLANT IN ORAN, ALGERIA



## Zero waste, energy efficiency and capacity building program

The test compost plant in Oran has been in operation since 2015 and currently covers all waste streams into controlled landfills. R20 has implemented a separate collection system for organic waste from markets and other sources. This organic waste is delivered to the composting plant in Oran. After an enclosed pre-composting and sanitization process, the waste is matured in a traditional windrow composting process.

The project includes the preliminary design of the technology, evaluation of options, project execution and the test operation of the plant. Additionally, a capacity building and training program is coordinated in closed cooperation with the relevant local authorities and partners.



### Impacts and Benefits

The Integrated Solid Waste Management (ISWM) system is comprehensive, locally-adapted and enables the collection, sorting, recycling, composting and valorizing of waste to be done more efficiently. The technical approach of the project is intended to serve as a model for waste management and valorization in the entire region. A coordinated and close cooperation with the local authority has been implemented and a monitoring platform on IT basis is used to continuously display the progress of the project.



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**Submitter:** Compost Systems as the supplier of technology and design services, R20 for the management and local organization

**Location:** Oran, Algeria

**Website:** <https://regions20.org/oran-algeria>

**Contact:** aurel.luebke@compost-systems.com



# WASTE-TO-ENERGY HYBRID FACILITY IN NAGA CITY, PHILIPPINES



## A private sector contribution to sustainable solid waste management

TFDR Integrated Resource Recovery Management Inc. (FDR-IRRMI), a company based in Cebu, started the Philippines' first hybrid Dry Anaerobic Digesting (DAD) biogas plant in Naga City, Cebu in June 2017. The waste-to-energy facility was designed and constructed by the Austrian company IUT GmbH.

The DAD biogas plant will produce electricity and heat by fermenting pre-sorted organic waste from domestic garbage which is being collected from the Cities of Naga, Carcar and the Municipality of Minglanilla in Cebu Province. The plant has the capacity to treat up to 130 tons of organic waste per day and produces 650 kilowatts/hour of electric power for the plant's own-use and may soon deliver to grid upon expansion. The DAD biogas facility is the latest addition to the resource recovery operations in Naga City, Cebu. It already has a material sorting facility, alternative fuel (RDF) facility from residual waste for use by a cement plant, and composting facility for the use of "Sergio's Farm", which produces organic vegetables and Cebu's strawberries.

In December 2017 FDR-IRRMI and IUT signed the contract for the extension of this plant with a 150 ton/day RDF and a 1 MW anaerobic digestion plant, which is planned to be in operation by the end of 2018.



### Impacts and Benefits

The mechanical-biological treatment at Naga Ecology Center combines a material recovery facility, a refuse derived fuel facility, a DAD biogas plant and a composting facility to produce compost for sustainable agriculture. Additionally, dumpsite closure in proper manner, lasting solutions for old landfills and landfill clean-up projects are successfully realized.



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**Submitter:** IUT GmbH - Innovation. Umwelt. Technologie.

**Location:** Naga City, Cebu, Philippines

**Website:** [www.theiutgroup.com](http://www.theiutgroup.com)

**Contact:** [r.goeschl@tbgoeschl.com](mailto:r.goeschl@tbgoeschl.com)



# SOLID WASTE MANAGEMENT IN LOH DJIBOUA, IVORY COAST



## Valorisation of municipal solid waste creating new sustainable jobs in the region

The project originated from the “Waste Project Facilitator” and was co-created by R20 Regions of Climate Action, EGIS (Engineering and Consulting Services) and the local government. The purpose of the project is to improve waste sorting on household level as well as the waste collection rate. The consortium is planning to create five sorting and composting stations. Additionally, one plastic to fuel unit will be implemented in the region in order to increase the recycling and valorisation rate of municipal solid waste. It will simultaneously create new sustainable jobs in the region.



### Impacts and Benefits

The project has a strong capacity building component and will increase local capacity for project development. With the creation of new jobs and revenue streams for the region, this project will also increase the capacity to carry out more climate protection projects. The project aims to be registered as a Gold Standard project.



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**Submitter:** R20 Regions of Climate Action

**Location:** Loh Djiboua, Ivory Coast

**Website:** N/A

**Contact:** dalbertani@regions20.org



# CIRCULAR BIO-ECONOMY PROJECT IN CONDOTO, COLOMBIA



## Bio carbon refinery based renewable energy project

This project for CO<sub>2</sub> neutral electricity production, heating and cooling in rural areas as well as biochar (charcoal) production for local, national and international markets uses local biomass and vetiver grass biomass derived from a geomorphological soil restoration program.

The local waste from agriculture and existing energy wood, as well as vetiver grass grown specifically on former mining areas, will be used as raw materials. Bio-carbon, which will be produced as an output product, is then reintroduced into the soil with manure, humus and/or effective micro-organisms (Terra Preta).

energy4future GmbH (e4f) is working together with the local community (Consejo Comunitario Mayor - Iró) of Condoto, the Colombian based mine operator and consultant (Extracon S.A.) and the climate project developer entities Ecotierra (Canada) and ecoPartners (California) to implement a bio-carbon refinery with an integrated biomass heating power plant as a central element of Condoto's circular economy project.

The submitters will include a science based third party evaluation of the project potentials as a groundbreaking contribution to holistic rural development in a world seeking for efficient decarbonization solutions.



### Impacts and Benefits

This project has an exceptional potential to restore poor soil and to isolate heavy metals from contaminated land (vetiver grass based phytoremediation). At the same time it will create direct and indirect jobs for more than 2,200 families and 8,700 individuals within both rural and urban areas. Some of these jobs will support social reintegration resulting from the peace deal between FARC and the Colombian government.



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**STAGE 3:** Feasibility Studies

**STAGE 4:** Permitting, Financing, Contracts

**STAGE 5:** Engineering, Construction, Operation

**Submitter:** energy4future GmbH (e4f); Extracon S.A.; Consejo Comunitario Mayor Condoto – Iró, Colombia

**Location:** Condoto, Province Chocó, Colombia

**Website:** [www.e4f.bio](http://www.e4f.bio)

**Contact:** [anton.aschbacher@astra-bioenergie.eu](mailto:anton.aschbacher@astra-bioenergie.eu)



# CENTER FOR RECYCLING AND RE-FUSE DERIVED FUEL IN THAILAND



## Knowledge and the gaining of experience to be used in projects within African countries

The project aims to sustainably reduce and solve local waste issues by promoting waste separation. Facilities will be set up for waste buying, as well as recycling facilities for material recovery and Refuse Derived Fuel (RDF) production, in an area with neither proper nor effective waste management. Ultimately this site will become a role model for other areas with waste issues. Primarily the knowledge and experience gained will be used in projects in other developing countries.



## Impacts and Benefits

The project will be developed together with the local community and local companies. It is intended to run as a role model to pass on knowledge of best practices in excellent waste management to other municipalities on national and international level.



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### STAGE 3: Feasibility Studies

### STAGE 4: Permitting, Financing, Contracts

### STAGE 5: Engineering, Construction, Operation

**Submitter:** Wongpanit International Co., Ltd.

**Location:** City Nakornthai, Province Phitsanulok, Thailand

**Website:** N/A

**Contact:** dalbertani@regions20.org



# THE CLEAN SUCCESSOR TO FOSSIL FUELS IN ETHIOPIA & KENYA



## Creating value from untapped resources

NextFuel is a clean successor to fossil fuels that turns abundant biomass (such as straw) and residuals (such as bagasse) into a coal briquette. The NextFuel technology has been proven in an industrial-size pilot plant in Frohnleiten, Austria and offers large-scale alternatives to fossil fuels. Implementing projects with NextFuel's technology will result in several benefits, including economic profit from converting widely available renewable resources into tradeable commodities and the social impact of establishing businesses, long-term perspectives as well as lowering energy costs by the affordable replacement of fossil fuels.



### Impacts and Benefits

The core innovation is to build a bridge from the agricultural sector to the sustainable energy market through technology. NextFuel is currently developing projects to build large-scale plants with industrial partners in Sub-Saharan countries.



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- STAGE 5: Engineering, Construction, Operation

**Submitter:** ACB Entwicklungsgesellschaft mbH  
**Location:** Addis Ababa, Ethiopia & Kisumu, Kenya  
**Website:** [www.nextfuel.com](http://www.nextfuel.com)  
**Contact:** [wolfgang.moser@nextfuel.com](mailto:wolfgang.moser@nextfuel.com)



# ATMOVE - BIOMETHANE MOBILITY FOR BRAZIL

## Innovation for small and medium farmers using residuals from agriculture as fuel and fertilizer

Atmove is working on a biogas-based mobility solution (bio-methane) for rural areas in Brazil to drastically reduce the dependence on fossil fuels, the fuel prices by 50% and emissions by almost 100%. The solutions target small and medium sized farmers and municipalities as well as the agro-industry. The agricultural residues are used to produce biogas which is upgraded to a 100% renewable fuel: Bio-CNG. In cooperation with the Brazilian partner Itaipu-PTI (CIBiogas) and with the support of Austrian funding three targets were reached:

1. Atmove created an innovation hub to "tropicalize" Austrian and European technology in the field of biogas production, methanation and mobility.
2. Building of cooperation with Austrian and Brazilian Universities in the biogas sector and in particular with the universities in Paraná.
3. CH4pa - prototype of a biomethane tractor - was constructed under the aspects of frugal innovation and efficiency to cover local needs and develop a virtual prototype of an innovative Mobile Upgrading Truck (MoBi), which converts Biogas to Bio-CNG on site and therefore massively reduces investment costs for famers. The biogas-biomethane-CH4pa system was tested in Itaipu Technology Park and serves as a prerequisite for a first pilot region in Paraná.



### Impacts and Benefits

The main focus is to develop sustainable and scalable biogas-based energy and mobility solutions tailored to the needs of Brazilian farmers. This biogas mobility system can help cooperatives and municipalities to reduce their waste problems, fuel costs and emissions while being economically feasible.



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**Submitter:** Spirit Design GmbH

**Location:** Itaipu - Foz do Iguaçu, Paraná, Brazil

**Website:** <http://atmove.at>

**Contact:** [georg.wagner@atmove.at](mailto:georg.wagner@atmove.at)



### 3 SUCCESS FACTORS

Finding innovative solutions for a resource-efficient, climate-friendly and resilient development of emerging economies is a process that provides huge opportunities as well as challenges and often requires “out-of-the-box” thinking. In order to support project developers, investors and other stakeholders in developing, implementing and maintaining mutually beneficial projects that meet the criteria of ecological, social and economic sustainability, important success factors have been gathered for this white paper. To collect and identify the most decisive ones, several different sources and activities were used:

- survey of the call
- output of workshops
- inputs from experts and project developers

The following identified success factors strongly reflect the selected projects described above and should be understood in close connection with them. Nevertheless, they comprise general findings that go beyond certain branches and countries and may therefore be a source of inspiration to other project fields.

#### Collaboration and Cooperation

Well-functioning cooperation is an obvious, yet not trivial factor for the success of any project. All promising partnerships are characterized by qualities such as trust, endurance and reliability. Therefore, a decisive advantage encountered in each of the evaluated projects was its being anchored in networks and thinking in line with the local community and local authorities. Cooperation and collaboration could be observed on two levels:

#### *Partnership within the acting project consortium or team:*

It proved to be essential to have all necessary implementers and partners on board. This comprises project developers, sub-contractors and technology providers, as well as those who implement and operate the project directly on site. Local lobbying partners might also join the team at an early stage, in order to increase the prospects of success. All partners need to be fully included

in the preparation and implementation of the project and need to stand on the side of the project team. Thus, a nucleus or a person of the consortium should be found that takes over the function of an interface and matchmaker.

*Cooperation with local governments and other local stakeholders* (not least, well connected NGOs) play a crucial role. These players also need to be involved in an early project phase and stand up for it. Above all, it is important to communicate the advantages and benefits of the project so that local stakeholders clearly recognize the results of the project and fully support it. In order to provide a framework for the common objectives and to define the relationship, agreements like MoUs (Memorandum of Understanding) are a proven and useful tool.

#### Building on success stories and examples

Building upon existing success stories and pilot projects helps to prove the feasibility and the potential of a planned solution. Especially in emerging and developing countries, as well as countries where the technology has not already been introduced, recommendations can have the needed positive influence on decision-makers. In this context, a key phrase stated several times by project developers was: “no bad references”.



Virunga Mountain Gorilla Project in Ruanda



In one project it was very important to introduce Austria's success story of using biomass for energy purposes; in order to show that the use of biomass has been continuously expanded and represents a real option and an essential domestic energy source for the country. For several other projects referring to and showing concrete existing demo plants or commercially running units was the most relevant factor.

### Tailored solutions for local needs

"Do not think in terms of technologies and/or products" was frequently offered advice. This means taking a specific look at local needs and circumstances to align the solution possibilities is a precondition for success. Especially in developing countries, technologies often need to be adapted to the local situation and local users. Therefore, the usual concept of "best available technology" might better be replaced by "best appropriate technology".

A good project approach is to directly identify an existing problem, e.g. illegal or uncontrolled landfills, and to develop solutions together with the interested party on site. Local value creation is important for decision-makers and stakeholders and in many cases makes the implementation of a project much easier.

Also, holistic project approaches dedicated to an entire problem chain, for example clean energy, sustainable food and water for households, support the relevance and thereby the realisation of a project. In this case the technology is not only sold for one specific problem, but is seen as a means to tackle more general challenges and needs.

Specific attention should be paid to the adjustment of pre-developed technologies to local (environmental) conditions, such as humidity or drifting sand, etc. – often termed "tropicalization" – as well as to the interplay of different technologies. Also, ongoing maintenance after the completion of a plant must be ensured, thus not creating new dependencies.

Therefore, knowledge transfer becomes a crucial success factor in order to ensure the continuous local



Atmove - Biomethane Mobility for Brazil

operation of a plant. In addition, cooperation with technology and service providers can prevent market distortion through heavily subsidised projects.

### Know-how transfer and capacity building

The integration of the projects into a sustainable knowledge transfer and the further training of the participating organisations and school facilities on site was mentioned several times as a positive factor. This knowledge transfer takes place in multi-stage processes and ranges from basic know-how, for example in water treatment, to complex knowledge structures at university level. At the same time, care should be taken to ensure that knowledge build-up remains firmly anchored on site.

However, capacity building is not only about cognitive understanding, but also about emotional involvement of the people on site. Allowing for a sense of ownership and making it "their" can ensure its acceptance and enduring legacy. The key word mentioned frequently in this context was "ownership".

### Consideration of ecological conditions

An assessment of the specific ecological framework conditions and locally given resource potentials may stimulate new business concepts alongside contributing to reduction of climate change and other environmental issues (such as methane emissions of illegal or uncontrolled landfills).

Several of the analysed projects showed how existing ecological problems, e.g. biogenic waste or fallow land

of mines, could be tackled while additionally providing access to new or additional resources. In Colombia for example, polluted soil is being geomorphologically restored with vetiver grass and derived biomass is becoming a core element of the circular bio-economy.

### Consideration of social and political conditions

Not only general factors like political stability and legal certainty in a country are of importance to project developers. In addition, particular social and political circumstances and developments within regions and/or authorities should be taken into account, as they may provide specific windows of opportunity (e.g. political transition processes, elections or office terms of local authorities).

One example of this approach is the biomass project in Colombia, which takes into account the peace process after the end of the FARC guerrilla. Following the peace deal between FARC and the Colombian government the project will support the social reintegration and the creation of jobs in neglected areas known as retreat areas of Colombian guerrillas. The project thereby seizes the historic opportunity to develop possible solutions for several problems simultaneously.

### Consideration of cultural characteristics

Understanding the cultural idiosyncrasies of a specific country or region was one of the most frequently mentioned success factors. Particularly where innovation meets tradition, "awareness" by project developers and meeting others on an equal footing is considered



Demo Composting Plant in Oran, Algeria



Demo Composting Plant in Oran, Algeria

essential for establishing mutual trust and understanding. Speaking the local language is not only a good basis for both aspects, but also constitutes a necessary prerequisite in many countries.

When it comes to identifying real experts and decision-makers on site, comprehensive research (e.g. the re-checking of references), effective networking and locally rooted staff members pay off quickly.

As mentioned during one discussion with project developers, it was noted that in "oral societies" drinking "three cups of tea" with local representatives can be more important for the advancement of a project than an official MoU or other written agreements.

### Innovation and proactive view

Foresight and the consideration of innovative approaches are recognized as driving success factors. This could be on a technological level (e.g. anticipation or at least consideration of emerging technologies) as well as on social aspects and challenges that cities and regions need to address (e.g. rural flight, very fast-growing cities and their environmental issues).

On the one hand, innovative new ideas can require unconventional and courageous steps. On the other hand, clients often request already established solutions, not "test plants". Therefore, it should be kept in mind that innovations can also be achieved on a small scale (technology adaptation to local peculiarities or resources) or with regard to the social field (e.g. multi-stakeholder integration, local employment and value chains).

### **Persistence & strong implementation drive**

In almost all projects, a strong willingness coupled with persistence was decisive for success. In regions such as India, South America and Africa, the respective culture-specific conditions (e.g. use of time resources) must be taken into account for efficient and sustainable project implementation.

Fostering the understanding of technologies and solutions, establishing mutual trust and convincing all relevant stakeholders will take time. Also, the project developers initially need to fully understand local circumstances and needs (e.g. consideration of social factors, elections or office terms of local authorities and contact partners) and find the right project and technology partners. Thus, presence on site (over a longer period) is crucial.



*Demo Composting Plant in Oran, Algeria*

After the initial project phase, the issue of financial resilience is a major success factor for many projects. Particularly projects that lack adequate (pre-)financing need to have great staying power and a strong willingness to push the project forward over a longer time period. This is especially true in case of unstable circumstances, as for example changing political commitments or funding conditions. In this case a high (financial) viability allows a project to be more resilient towards external changes.

### **Access to funding**

With regard to financial resources, one of the most important success factors mentioned by several analysed projects was an early stage funding for feasibility studies. Many projects fail because of lack of funding

in an early project stage or because funding is mainly allocated to large scale projects.

Therefore, another key factor is existing knowledge concerning financing opportunities and access to them. For project developers to get an overview of financing opportunities in the post-Paris context (on the national and international level) can be very intricate at the moment. However, many International Financial Institutions (IFIs) lament that there are fewer project submissions than could actually be funded.

Generally, project information should be structured in a way that is easily understandable by financial institutions. A specific advantage in terms of access to funding is an already proven relationship between the project developer and financing institutions based on prior cooperation.

Sometimes also unconventional financing opportunities can successfully be used, as was the case in Colombia with post-conflict resources. However, some other projects still provided their own resources even if no external funding or subsidies were available.

## 4 POLICY RECOMMENDATIONS

The detected success factors provide a basis for advocating for the implementation of framework conditions that support the potential of energy and climate projects worldwide. This white paper therefore addresses decision-makers in countries, regions and municipalities, as well as non-state actors such as companies, private initiatives, platforms, and NGOs. It has also been submitted to the United Nations Framework Convention on Climate Change in order to be integrated into the UNFCCC's official Talanoa Dialogue.

Talanoa is a traditional word used in Fiji and across the Pacific to reflect a process of inclusive, participatory and transparent dialogue. The purpose of Talanoa is to share stories, build empathy and to make wise decisions for the collective good.

Ahead of the COP 24 climate conference in November 2018, the United Nations have started such a process designed to allow countries to collectively assess the progress made on climate action so far to reach the Paris Agreement goals. Moreover, the Talanoa Dialogue should also help to inform on the next step of National Determined Contributions (NDCs).

To collect stakeholder's inputs, the climate framework UNFCCC has launched the online platform [talanoadialogue.com](http://talanoadialogue.com) where party and non-party stakeholders can submit their proposals addressing three main questions: Where are we? Where do we want to go? And how do we get there?

As contribution to the third leading question of this dialogue – “*how do we get there?*” – the following recommendations were developed out of the identified success factors. The R20 Austrian World Summit, as official partner of the Talanoa Dialogue, submitted the outcomes of the working sessions together with this white paper to the Talanoa Dialogue process.

### Political commitment

A strong political commitment by decision-makers at all levels to implement their respective national climate protection targets (Nationally Determined Contributions, NDCs) and the Sustainable Development Goals (UN SDGs) – regardless of legislative periods and short-term political considerations – is a prerequisite for the development and the planning of projects. Businesses and organisations need stable and reliable long-term framework conditions in order to successfully develop and realise their respective projects. Furthermore, innovative ideas require political courage and sometimes also exceptions from usual procedures.

Commitments by regions and cities in particular play a key role, as they are closer to the problems and solutions, as well as to the places of implementation. Also, ambitious examples by companies, private initiatives and platforms send an important signal to other private actors.

### Lighthouse projects

Lighthouse projects – of all sizes and on all levels – make viability and successes visible and encourage imitation. Showcase projects (realised under comparable circumstances and in similar regions) are the best role model to guarantee transparency and support the reproducibility.

For an effective realisation of lighthouse projects by capitalising on synergies, initiatives may focus on certain regions (e.g. in accordance with the country's main foreign policy areas).



Municipal Solid Waste Treatment Plant in Mumbai, India



*Sustainability Package for Households in Meki, Ethiopia*

### Knowledge sharing and bundling

Creating platforms for the sharing of knowledge and supporting projects particularly in the feasibility stage is an important task. Not least, sharing negative experiences during different project stages can be valuable information. As willingness to share these sensitive informational aspects generally turns out to be low – especially during early project phases – corresponding initiatives (incl. twinning projects and buddy networks) should be encouraged.

In the medium term, cooperation between cities and regions as well as between universities could be an important lever for creating and sharing knowledge internationally. In a longer-term perspective, additional exchange on an individual level (e.g. via programs for students, trainees, etc.) may contribute to building bridges and fostering trust and mutual understanding, especially between different cultural areas.

The collected and processed information should be bundled at central contact and service points (e.g. at a public office or in private project preparation facilities). Currently, the Talanoa Dialogue is a good example of how to support parties on all levels to share their experiences and solutions, thereby contributing to the implementation of the NDCs (Nationally Determined Contributions).

### Platforms and matchmaking opportunities

Multi-stakeholder initiatives with low-threshold points of contact for interested partners involved in climate protection and sustainable development should be further promoted and made more accessible, especially at

local levels. These exchange platforms should become well-accepted interfaces for finding all relevant partners in one spot (one-stop-shop principle) and for sparring project ideas. Moreover, they should provide opportunities to skip middlemen and come into direct contact with decision-makers.

### Cross-cutting partner networks

Decision-makers should particularly support networks of “unusual alliance” partners with different backgrounds, e.g. cooperation between the business sector and developing agencies. These kinds of partnerships could, on the one hand strengthen the export of green technologies to developing and emerging countries, and at the same time mobilise private investors and activities to contribute to a sustainable development of these countries.

### Responsibility, accountability, transparency

Accountability and transparency of projects should be improved by common principles of measuring, reporting and validating (MRV). In order to ensure efficient and climate-resilient solutions in accordance with the SDGs, such comprehensive assessments should also include external effects (e.g. CO<sub>2</sub> emissions and other environmental and social impacts), as well as opportunity costs (“costs of inaction”). Last but not least, these assessments should be made accessible and spread widely.



*Solid Waste Management in Loh Djobou, Ivory Coast*

### Access to finance

A bundling of financial instruments on national level would be necessary to improve transparency and overview for interested parties. This could be implemented by establishing a single access point for project financing



*Circular Bio-Economy Project in Condoto, Colombia*

tools that cover climate change, renewable energy and sustainable development aspects. These tools should provide rapid realisation of new funding opportunities (including unconventional instruments like philanthropic money, venture capital, etc.) and focus on a longer-term perspective beyond a fast return on investment. Better risk cover for innovative, venturesome projects is particularly needed at an early project stage, as (additional) private financial resources may be easier mobilised after mitigation of initial risks.

Furthermore, contradicting funding conditions and existing gaps between small grants and conventional large-scale financing need to be eliminated. In this context, project sizes between 2 and 5 million euros were specifically addressed; these projects can have a significant and direct impact on site and could be replicated much easier than (for example) large infrastructure projects.

### **Access to feasibility studies**

Feasibility studies represent crucial enabling instruments as they often constitute the basis for project tendering; thus the better the quality of a feasibility study, the better the tendering and, ultimately, the more sustainable the realised project.

Access to funding of (at least brief) feasibility studies therefore needs to be facilitated. Ideally, these should encompass strategic as well as technical aspects. By these means, the transfer of knowledge may also be facilitated to developing and emerging countries.

Finally, feasibility studies may not only be provided by companies for certain projects but could also focus on potentials of municipalities or whole regions. Authorities of different countries and/or regions should therefore cooperate in order to provide independent assessments (in accordance with defined standards) that may serve as a starting point for business projects.

### **Closing Remarks**

This overview of policy recommendations should be understood in the context of the identified 10 best practice projects. However, discussions with project developers and stakeholders have shown that these findings can be transferred to a large number of projects.

This report shows that knowledge, innovation and capacity building to fight pollution and streamline clean energy projects are increasing in regional areas. It also becomes clear where the main gaps and needs to set up sustainable projects are.

The crucial success factor here is the synergy between all stakeholders and we look forward to finding ways to expand partnerships to help each other incorporate more cities, states and regions into the environmental crusade.

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