

EXPLORING SUSTAINABLE LOW CARBON DEVELOPMENT PATHWAYS



PIONEERS OF CHANGE 21 GOOD PRACTICES FOR SUSTAINABLE LOW CARBON DEVELOPMENT IN DEVELOPING COUNTRIES

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Providing sustainable development for all and fighting climate change – these are two major challenges the world faces today. The project “Exploring Sustainable Low Carbon Development Pathways” aims to point out ways how to combine both: climate protection and sustainable development. As a joint initiative by Friedrich-Ebert-Stiftung (FES), Bread for the World (BftW), World Wide Fund for Nature (WWF), Climate Action Network International (CAN-I) and ACT Alliance of Churches, the project is led by the common understanding that any future development model has to be:

LOW CARBON. That means with a minimal output of greenhouse gas emissions.

ECOLOGICALLY SUSTAINABLE. That means fully respecting planetary boundaries.

HUMAN RIGHTS-BASED. That means with a strong focus on poverty reduction and participation.

SOCIALLY INCLUSIVE. That means creating wealth and employment while absorbing negative social impacts.

JUST. That means equally sharing burdens and opportunities between different stakeholders.

NATIONALLY APPROPRIATE. That means respecting countries different backgrounds and challenges towards sustainable development.

The project was started in 2013 in four pilot countries: Kazakhstan, Peru, Tanzania and Vietnam. In close co-operation and ownership with different national partners from civil society, politics and science we aim to

- Explore Sustainable Low Carbon Development Pathways in these countries which could serve as regional and international examples.
- Show that Low Carbon Development is not only possible but economically and socially beneficial.
- Create platforms for dialogue at the national level for a range of different stakeholders.
- Support and intensify networks between civil society actors in the respective countries and regions.

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LA PAZ AND ITS TWIN CITY EL ALTO: A TRANSPORT METAMORPHOSIS

Matthias Nuessgen

Since 2004, several Latin American cities have started to use urban ropeways as an additional mode of public transport. The first projects aimed at making small informal and isolated areas accessible and offer their populations better connections to the cities. Huge improvements in travel time were achieved for the passengers, who sometimes had needed hours to travel from their neighbourhoods to the city centres, and can now make the same trip in minutes. Medellín (2004) and Caracas (2010) are the most obvious examples of this groundbreaking strategy.

Detachable ropeways consist of many cabins that are sustained and propelled by a revolving cable pulling continuously in one direction. This form of common movement of many vehicles simultaneously is far more effective than the constant acceleration and deceleration of independent vehicles on a rail or road network, and it does not need a schedule because the cabins leave the stations every 10 to 20 seconds, depending on the characteristics of the system.

Compared to other transport modes with similar capacities, gondolas have low maintenance and construction costs. Apart from that, the vehicles themselves do not carry engines, fuel, wheels, chassis, or suspensions, thus they are lightweight, which makes them a very energy-efficient and hence clean mode of transport.

With a maximum capacity of up to 6000 passengers per hour per direction (pphpd), cabins do not have the same capacity as underground metros, regional trains, or large Bus Rapid Transit (BRT) systems, but they are far easier to integrate into an urban environment than a BRT system or an over-ground rail system, and far easier to implement than an underground metro.

With a comparable capacity to tramways or small to medium-sized BRTs, they are very compatible as feeder systems for mass transit corridors or to fill gaps in existing networks. They help the mass transit modes enlarge the corridor of city fabric they are able to cover, and make them use their capacity more effectively. This increases the attractiveness of public transport, for the user as well as for the operator.

ROPEWAYS AS THE BACKBONE OF TRANSPORTATION IN LA PAZ AND EL ALTO

With the implementation of the world's largest network of urban cable cars in La Paz, the transport mode is about to complete its next development step. Here, cable transit is developing to become the backbone of metropolitan transit between La Paz and its twin city El Alto. The basic idea has been to connect two almost equally populated cities of a metropolitan area with ropeways as a main mode of transport. The geographic conditions in La Paz make cable cars the logical choice for this connection. El Alto lies on a plateau of the Altiplano, about 400 metres above the historical city of La Paz.

El Alto is by far the poorer of the two cities and suffers from severe social problems caused by its incredibly fast urban growth and the resulting housing shortage and unemployment. The *Human Development Report*—published in 2004 by UN-Habitat—reported that only 7.3 per cent of the *Alteños* were able to satisfy their basic necessities. According to the report, 25 per cent lived on the threshold of poverty, 48 per cent in moderate poverty and 17 per cent of the population lived in severe poverty. Nevertheless, the city is still growing faster than any other Bolivian city. What was only a village with a few houses in the 1950s has overtaken La Paz as the biggest city of the country and has over a million inhabitants today, with no end in sight.

In the 60 years of its existence, El Alto has attracted big parts of the original population from the Bolivian highlands to the metropolitan area, because they had lost their source of livelihood due to extreme climate change—i.e., droughts, torrential rainfall, and a temperature rise that allowed insects and diseases to affect their crops. For this reason, El Alto is the largest city in Latin America with a primarily indigenous population. About 85 per cent of its inhabitants belong to one of the many indigenous groups of the country, 15 per cent are Mestizos (decedents of indigenous and white Europeans), and less than 1 per cent belong to other races.

Both cities were united within the same metropolitan area, yet separated by a huge income difference, and a clear racial segregation. Public transport was developed separately in La Paz and El Alto, and discussions to develop a metropolitan transport system started only in 2010. This new system allows regular interchange between both cities and opens up an entirely new world of economic opportunities to the citizens of El Alto.

MI TELEFERICO

Apart from municipal efforts to improve the mobility in the twin cities, the national government of president Evo Morales began to plan and implement the ropeway system Mi Teleferico. Although there are obviously conflicts with the metropolitan administration, the systems will be integrated into one coherent transport system.

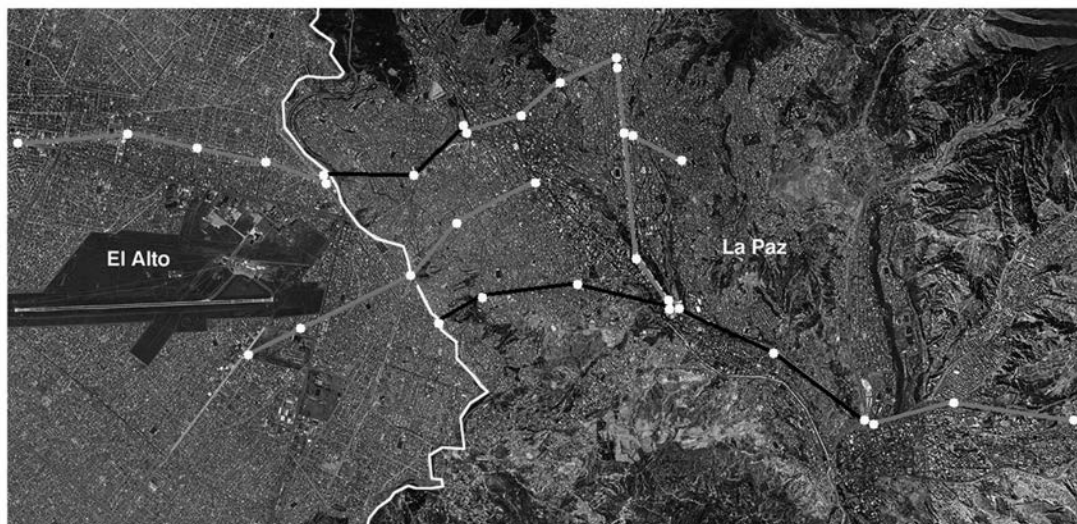
On 30 May 2014, the president inaugurated the first of three cable lines; he underscored that the project was meant to improve mobility options for the poorer segment of the population. By the end of the 2014, all the three lines had been completed, thanks to an investment of USD 234 million. Just after the last line was completed, the implementation of a bigger second phase was announced in early 2015. Over the next four years, another six lines with a total length of about 20 kilometres will be installed. The investment for this second phase will be USD 450 million.

Until the implementation of the first phase of Mi Teleferico, mobility options connecting the two cities of La Paz and El Alto were scarce. The trip by car or minibus normally took over one hour, due to the poor road infrastructure. The cable car system now provides state-of-the-art transport infrastructure, offering quick, affordable, and safe connections between the two cities. The fare for a single trip is 3 Bolivars (Bs), the equivalent of USD 0.40. Compared to the fare prices for the bus services in La Paz, these trips are more expensive, but for the population they seem to establish an improvement big enough to justify the price. In its first year of existence, the system carried over 23 million passengers, which is roughly about 25 per cent of the full capacity for three lines in one year. Taking into account that the service started with only one line and that the other two have only been completed in September and November 2014, this is a very reasonable result. The Ropeway's Impact on Carbon Emissions Reduction.

To realistically calculate the potential CO₂ savings of the La Paz ropeway systems, a detailed study would be necessary. Other examples prove, however, that the mitigation potential is huge: six ropeways in Medellin (Columbia) have mitigated 157,000 tons of CO₂ in seven years of operation. According to a study by Climate-partner, ropeways are thus the cleanest mass transport mode available at the moment.

From a social point of view, it is obvious that only affordable transport modes can be socially sustainable. Current prices still are too high for the poorest segments of the population.

Every transport mode creates jobs, but it may also make others obsolete. The downside of the improvements in the metropolitan area of La Paz is the fear of competition amongst the private minibus and taxi operators. Though the plan is to integrate them into the system as feeders for the mass transit modes, they form a fierce opposition—especially against the implementation of the bus services.



Legende:
 Phase I —
 Phase II —

Figure 7: The ropeway system connecting El Alto and La Paz. Source: Doppelmayr

Another risk of the development is related to the clash of cultures, which has occurred in La Paz since the opening of the ropeway system. Many citizens from the wealthier parts of La Paz have even started complaining about the omnipresence of indigenous beggars and vendors in the city's streets. The government was very quick in its reaction, accusing them of racism; nevertheless, due to the huge cultural and economic differences, the real integration of the societies of both cities will probably take a lot more time than it takes to build a cable car.

TOOLBOX: WHERE TO FIND MORE INFORMATION	
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