

## 8.2.2 Supporting Electric Mobility in Developing and Emerging Countries

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This section focuses on electric mobility in Southern countries which designates developing and emerging countries through misuse of language, that is countries where the French Development Agency, AFD, works and finances projects.

Before talking about electric mobility itself, you are invited to watch the video on sustainable urban mobility. It explains the challenges that urban transport is facing regarding climate change and a full range of measures that can meet these challenges. It is in particular the ASI-E framework which has been adopted by international financial institutions in order to support Southern governments and cities to promote a sustainable urban mobility.

Second point as introduction, we will not talk here about other low-emission vehicles such as natural gas or biofuel buses. For us, electric mobility can be related to two-wheelers, buses and private vehicles.

Our financing projects can support any solution in terms of techniques : 100% electric vehicles of course, but also plug-in hybrid vehicles, conventional "first-generation" hybrid vehicles, or even hydrogen-fuel-cell vehicles.

Finally, in our projects, electric mobility is not only about vehicles. It is a complex system which requires infrastructures, the charging points and the power networks, some equipment such as batteries. It is even an ecosystem, that of electromobility, which brings opportunities in terms of new services and uses in transport.

Now, let us see how electric mobility can or cannot bring answers to the specific challenges of Southern cities.

### **Cities in the "South" : same challenges as in the "North" ... but more prevalent**

These cities are experiencing faster demographic growth than elsewhere. This generates greater mobility needs and pressure on fossil resources, air and noise pollution, and CO<sub>2</sub> emissions from driving that increase faster. To face these challenges, electric mobility can be a solution.

As for congestion, road sharing and accessibility to territories or districts issues, major challenges in the South, or even regarding the consumption of primary energy, electric mobility does not necessarily bring solutions. First, an electric vehicle is still a vehicle. Second, the power required to produce batteries must be considered as well as the potential air conditioning.

More generally, electric mobility appears as being one of the solutions for sustainable mobility in the case of the "Improve" part within the ASI-E strategic framework, or even for the "Shift" and the "Enable" parts.

Things are happening and it seems that it has been moving fast for one or two years in terms of electric mobility. But the issue of urban mobility must not be reduced

to this single answer. It offers possibilities indeed, but it does not solve everything and also faces constraints.

### **Electric mobility : common constraints in the "North" and in the "South"**

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There are common constraints in the North and the South : the acquisition cost of the vehicles is still high, the network of charging infrastructures is insufficient, autonomy although it is probably rather a psychological reluctance now, and finally technical issues for managers who would like to move from a fleet of thermal buses to an electric fleet.

**... but additional challenges in the "South"** There are also specific constraints in the South to the development of electric mobility.

First, electrical power is not always available as opposed to the North in terms of quantity, reliability or tariffs.

Then, we must raise questions in institutional and industrial terms. Can vehicles, equipments, infrastructures be maintained over time ? What about the public policies for mobility in terms of investments and maintenance of road infrastructures, of the regulation of the transport operators' activity, of vehicles' licensing ? Also in terms of specific incentives in favor of electric vehicles and in tax matters.

Finally, financial institutions such as the French Development Agency or others mainly finance projects through loans. Are the public authorities in the countries where they intervene willing to borrow on this theme ? How can we help them compare this cost with the benefits, particularly environmental ones, which electric mobility can bring ?

### **Electric mobility : real potentialities in the "North" as in the "South" ...**

These questions must be raised because electric mobility offers real possibilities in the North and in the South for three main reasons.

There is now an actual global awareness regarding challenges, notably on climate, but also regarding solutions such as the necessity to work through networking and by sharing knowledge. The C40 global network for instance gathers over 40 major metropolises, half of which are located in developing countries. They committed themselves to sustainable development solutions.

Second, the battery cost reduction is also exceptional while their performances are increasing. This cost reduction indeed is mainly due to the large Chinese supply. This phenomenon can be compared to what happened with solar panels.

Finally, electric solutions are particularly adapted for specific areas where vehicles are intensively used such as in car-sharing, public transports, or freight transport in cities.

**... and additional potentialities in "Southern" countries ?** Then, we feel that there are additional potentialities in the South.

First, electric mobility offers are already abundant or at least present and can be developed in China of course, but also in India, Colombia, South Africa, etc.

Second, just like cell phones which have been the main telephony offer without going through landlines in certain territories, we can imagine, hope, contribute to a technology leapfrog to direct electric mobility without a stage relying on thermal vehicles, even for new owners of private vehicles ; this purchase of private vehicles is at least partly unavoidable.

Finally, electric mobility can contribute to a faster emergence, compared to the North, of new transport uses : shared mobility as said before, digital services, or battery recycling industries for instance.

### **Possible actions by a technical and financial partner like AFD (or other ones)**

**What and where ?** So, what can institutions such as the French Development Agency or others do to support the development of electric mobility ?

First, focus on public transports and on countries and cities where energy availability and governance are more or less well established prerequisites ; in cities that have committed themselves to voluntarist approaches such as the C40. Also in countries where the French Development Agency is already involved in the transport sector. Here is a first list of cities where it might be interesting and possible to prospect and act.

**To finance what ?** The French Development Agency can thus finance the electric development of feeder services to mass transit transport corridors. Indeed, because of the costs involved, all Southern cities will probably not be able to implement mass transit networks such as subways with many lines connected as in the North, even in the long run. It can also finance charging infrastructures and equipment thermal vehicles scrapping programs towards vehicle fleets renewal, and finally exchanges of expertise between French economic actors and countries that are French Development Agency partners.

**How ?** For that matter, the French Development Agency is considering working with its partners on bus motorization, within the framework of Bus Rapid Transit projects it finances, the BRTs, financing specific projects on vehicle fleets renewal, including an electric mobility component in projects that aim at improving air quality management in a city.

### **Conclusion**

We have been through the potentialities and constraints linked to the implementation of electric mobility systems in developing and emerging countries from the point of view of what is both a public institution and a bank financing development projects such as the French Development Agency and also other donors probably. Electric mobility appears to be one of the solutions for sustainable mobility. It does not solve every problem. But it is interesting to develop, especially to reduce the pressure on fossil energies, reduce air and noise pollution, partly reduce CO<sub>2</sub> emissions, and also to introduce new transport use.

The French Development Agency intends to support countries and cities where the energy supply meets the demand reasonably well and where there is a strong political support to sustainable mobility, so that AFD can contribute to raise or develop electric mobility solutions.

By constantly exchanging with its partners on this theme, the French Development Agency intends to launch several pilot operations over the coming years.