

Bhutan plans a green paradigm shift

India's neighbour Bhutan has embarked on an ambitious drive to have an all-electric vehicle parc. **Sumantra B Barooah** delves into its radical zero emission mobility strategy and queries whether India can take a leaf out of its green book.



Sound of silence. A Nissan Leaf cruises down the streets of Bhutan's capital, Thimphu.

At 720,000, Bhutan's population is less than half of the population of a small Indian state like Goa. But despite its size, the pristine Himalayan kingdom has attracted the world's attention with some of its policies and actions. Bhutan first drew global attention when it floated the idea that progress be measured not by the popular yardstick of

GDP but by Gross National Happiness (GNH).

And now it is making many OEMs, and perhaps countries too, sit up and take notice with its decision to promote emission-free mobility with electric vehicles (EVs). "It is a very forward and strong statement," says Chetan Maini, founder and CEO, Mahindra Reva. Andy Palmer, chief planning officer and executive vice-president responsible

The prime minister of Bhutan, Tshering Tobgay with Mahindra & Mahindra's Dr Pawan Goenka at the launch of the Mahindra e20 in Bhutan, after the signing of the MoU on February 27.





Start of a new journey. The Bhutan government aims to provide all support and partner OEMs in developing the EV market. Industry executives feel this could be an example for other markets.

for zero emission vehicle planning and strategy. Nissan Motor Corporation, says "Bhutan has a bold national EV ambition."

The sale of conventional internal combustion-engined (ICE) vehicles has been banned in the country for the past two years as Bhutan tried to manage its BoP (balance of payments) by reducing imports of vehicles and fossil fuel. But it has provided an incentive to promote cleaner transport alternatives in the form of EVs. In 2012, Bhutan imported fuel worth around Nu. 6.3 billion (Rs 630 crore).

Bhutan initiated action on its environment-friendly vision towards end-2013. "We hope that by 2020 most of the vehicles in Bhutan will be EVs," says Thinley Namgyel, who is directly involved in the initiative as director of

Bhutan's Gross National Happiness Commission, in an email response to *Autocar Professional*.

Bhutan has a vehicle population of around 70,000 currently. OEMs like Nissan and Mahindra Reva see strong potential here and made quick moves to launch their products. Nissan made the first move by launching the Leaf on February 21, 2014. It chose the birthday of Bhutan's king Jigme Khesar Namgyel Wangchuck to make the formal entry 'as a symbol of the strong partnership between Nissan and Bhutan and their shared vision of the future'.

As a first step in the cooperation, Nissan will deliver Nissan Leafs for use in the government fleet, and as taxis, as well as demonstration units for the national rollout of EVs. Quick chargers will also



There is good business opportunity for both vehicles as well as for infrastructure like EV charging stations in Bhutan.

THE IMPORT BAN ON INTERNAL COMBUSTION-ENGINE VEHICLES IN BHUTAN TO MANAGE THE BoP OF FUEL IMPORTS HAS TURNED INTO AN INCENTIVE TO PROMOTE EVs.

30 SECONDS ON... BHUTAN'S EV-OLUTION

- Population: 720,000
- Vehicle population: 65,000-70,000
- Thunder Motors is a local company which has assembled an electric vehicle prototype using local technology.
- Bhutan's climatic conditions and terrain may be favourable for EV makers to test vehicles there. The government is open to talks with automakers to set up EV testing facilities and assembly units in Bhutan.
- Nissan likely to launch the assembled-in-India e-Evalia in Bhutan.
- Nissan may join Thunder Motors in developing its small EV and offer it as an entry-level model.
- Mahindra Reva likely to launch the e-Verito sedan and e-Maxximo van later in Bhutan.
- Mahindra Reva hopes to have products "specifically designed for Bhutan in the future."

be supplied to implement the government's plan for infrastructure covering the entire Himalayan nation. Feasibility studies for further technical cooperation are included in the details of the agreements. Bhutan, on its part, will offer zero custom duty, sales tax and also a carbon credit scheme whereby for every EV sold, the OEM will earn credit that can be traded for tax exemption for imported ICE vehicles.

Nissan's local sales partner, Thunder Motors, is also an R&D firm. It has assembled a prototype that could be later productionised in partnership with the Japanese OEM.

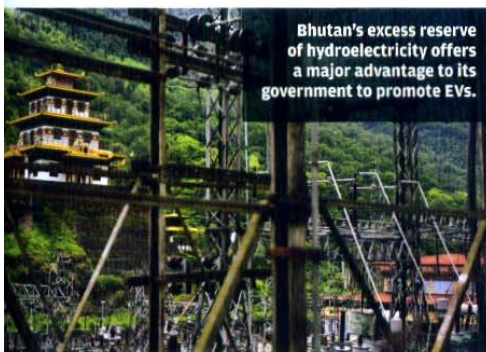
AN OPPORTUNITY AND A LESSON

The Mahindra Reva also entered Bhutan with its e20,

on February 27. "We are encouraged that Bhutan is providing this kind of support for making electric vehicles affordable in their country. And I would hope that Bhutan becomes an example for many other nations, including India," says Dr Pawan Goenka, chairman, Mahindra Reva, and president of Mahindra & Mahindra's Automotive and FES divisions.

Bhutan has signed MoUs with both Mahindra and Nissan. The details of the level of partnership are currently being discussed. It is also yet to finalise the level of investment that will be allocated for sustainable eco-friendly mobility in the country.

Meanwhile, Bhutan is working on designing various schemes to achieve sustainable and eco-friendly solutions for personal and public



Bhutan's excess reserve of hydroelectricity offers a major advantage to its government to promote EVs.

STOP PRESS! TESLA GOES TO BHUTAN



American premium EV maker Tesla could be the next to enter Bhutan. Its Model S is undergoing tests in Bhutan. Tesla hasn't launched the model or signed any MoU with Bhutan yet. The Model S will be tested in Bhutan for three months or so. In this photo, which appeared in *Kuensel* - a newspaper in Bhutan, prime minister Tshering Tobgay is seen inspecting the Model S after test driving it.

Banning the sale of ICE vehicles and allowing sale of only EVs is a very strong and forward-looking step by the government. How do you see the automotive landscape in Bhutan changing by, say, 2020?

While it is little early to say precisely how the automotive landscape in Bhutan will change by 2020 as the EV is a recent initiative (initiated towards end-2013), we are hopeful that by 2020 most of vehicles plying in Bhutan will be electric vehicles.

There are a number of challenges we need to address such as affordability, EV infrastructure network, issues related to battery life and battery disposal. However, given the strong political commitment, our efforts are geared to addressing these challenges and ensuring our goal of zero emission mobility based on a sustainable, environment-friendly and efficient transportation system is achieved.

What are the other reasons behind Bhutan promoting electric vehicles and banning conventional vehicles with internal combustion engines?

Bhutan's socio-economic development is guided by the philosophy of 'Gross National Happiness'. It aims to balance socio-economic development (pillar 1) with preservation and promotion of our culture (pillar 2), conservation and



'BHUTAN'S CLIMATIC CONDITIONS AND TERRAIN PROVIDE AN EXCELLENT OPPORTUNITY FOR MANUFACTURERS TO USE BHUTAN TO TEST THEIR EV MODELS.'

sustainable utilisation of environment (pillar 3) and ensuring good governance (pillar 4), which forms the four pillars of GNH.

The electric vehicle initiative directly contributes towards pillar 1 and pillar 3. Contribution to pillar 1 is through reduction in import of fossil fuel and

channeling the resources saved for social development activities. Contribution to pillar 3 is through reduced emissions.

Does Bhutan also plan to support and promote hybrid vehicles at a later stage?

There are a few hybrid vehicles already in Bhutan. However, our

immediate focus is in ensuring successful implementation of electric vehicles.

How have automotive consumers in Bhutan responded to the ban?

Understandably, imposition of any ban or restriction is generally faced with certain level of resistance and dissatisfaction. However, given the reality of the situation, the need to look for an alternative solution in the form of EVs has also been recognised.

Norway, in the West has taken a lead in promoting clean mobility by emerging as a leading EV market. Do you think Bhutan can take a lead, in Asia, if not in the world, in creating the most suitable environment for EVs?

The shorter driving distance between various places within Bhutan, abundant clean renewable hydel resources, a strong political will and our commitment to perpetually remain a carbon-neutral country does provide Bhutan with an opportunity to promote clean mobility and efforts are being directed towards creating the most suitable environment towards this endeavour.

What incentives is Bhutan offering EV makers to enter the country and to consumers to adopt emission-free vehicles?

Besides zero custom duties

and sales tax, the carbon credit scheme whereby for every EV sold, the manufacturer will earn credit that can be traded for tax exemption for an imported ICE vehicle. Further, Bhutan's climatic conditions and terrain provide an excellent opportunity for manufacturers to use Bhutan to test their EV models – Bhutan is open to discuss such possibilities for establishing EV testing facilities, conversion, assembly and manufacturing units in Bhutan.

For consumers, the government is exploring possibilities of proving free electricity to charge EVs, facilitating establishment of nation-wide quick charging infrastructure at appropriate intervals, a battery leasing scheme to reduce initial upfront financial burden and battery warranty scheme to protect buyer interests.

Is the government planning to offer support to a local company like Thunder Motors to grow as an EV maker?

Thunder Motors assembled an EV prototype using local technology but it is yet to do so on a large scale. The Bhutanese government will support any new company or initiative that contributes to zero emission, reduces dependency on fossil fuel, and creates jobs. Our role is to create an enabling environment for promotion of EVs in Bhutan.

SUMANTRA B BAROAH



CEO Carlos Ghosn's presence at the formal launch of the Nissan Leaf in Bhutan reflects the Japanese OEM's focus in the small country with big potential for electric vehicles.

transport. Key among the immediate steps are:

- Replacing existing ICE government vehicles with EVs.
- Replacing taxis with EVs, starting with Thimphu, the capital.
- Encourage switching of private/personal ICE vehicles to EVs.
- Explore mechanisms for disposing off ICE taxis for every EV taxi put on road.
- Development of infrastructure such as quick chargers at appropriate intervals to

support adoption of EVs.

- Initiating a study to put in place an efficient public transportation system based on EVs, starting with city buses.

It's a little early to pass a verdict on the efficacy of Bhutan's strategy to go fully green. "It is often perceived that third world or developing nations can't take leadership. I think it's about taking leadership and changing that," feels Maini. Bhutan now has a chance to prove it. ■