



REPUBLIC OF MAURITIUS

SEVENTH NATIONAL ASSEMBLY**PARLIAMENTARY****DEBATES****(HANSARD)****FIRST SESSION****FRIDAY 09 DECEMBER 2022**

CONTENTS

PAPERS LAID

PRIVATE MEMBERS' MOTION

SEASON'S GREETINGS

ADJOURNMENT

THE CABINET

(Formed by Hon. Pravind Kumar Jugnauth)

Hon. Pravind Kumar Jugnauth	Prime Minister, Minister of Defence, Home Affairs and External Communications, Minister for Rodrigues, Outer Islands and Territorial Integrity
Hon. Louis Steven Obeegadoo	Deputy Prime Minister, Minister of Housing and Land Use Planning, Minister of Tourism
Hon. Mrs Leela Devi Dookun-Luchoomun, GCSK	Vice-Prime Minister, Minister of Education, Tertiary Education, Science and Technology
Dr. the Hon. Mohammad Anwar Husnoo	Vice-Prime Minister, Minister of Local Government and Disaster Risk Management
Hon. Alan Ganoo	Minister of Land Transport and Light Rail Minister of Foreign Affairs, Regional Integration and International Trade
Dr. the Hon. Renganaden Padayachy	Minister of Finance, Economic Planning and Development
Hon. Mrs Fazila Jeewa-Daureeawoo, GCSK	Minister of Social Integration, Social Security and National Solidarity
Hon. Soomilduth Bholah	Minister of Industrial Development, SMEs

	and Cooperatives
Hon. Kavydass Ramano	Minister of Environment, Solid Waste Management and Climate Change
Hon. Mahen Kumar Seeruttun	Minister of Financial Services and Good Governance
Hon. Georges Pierre Lesjongard	Minister of Energy and Public Utilities
Hon. Maneesh Gobin	Attorney General, Minister of Agro-Industry and Food Security
Hon. Jean Christophe Stephan Toussaint	Minister of Youth Empowerment, Sports and Recreation
Hon. Mahendranuth Sharma Hurreeram	Minister of National Infrastructure and Community Development
Hon. Darsanand Balgobin	Minister of Information Technology, Communication and Innovation
Hon. Soodesh Satkam Callichurn	Minister of Labour, Human Resource Development and Training
	Minister of Commerce and Consumer Protection
Dr. the Hon. Kailesh Kumar Singh Jagutpal	Minister of Health and Wellness
Hon. Sudheer Maudhoo	Minister of Blue Economy, Marine Resources, Fisheries and Shipping

Hon. Mrs Kalpana Devi Koonjoo-Shah

Minister of Gender Equality and Family Welfare

Hon. Avinash Teeluck

Minister of Arts and Cultural Heritage

Hon. Teeruthraj Hurdoyal

Minister of Public Service, Administrative and Institutional Reforms

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MAURITIUS**Seventh National Assembly**

FIRST SESSION

Debate No. 32 of 2022**Sitting of Friday 09 December 2022**

The Assembly met in the Assembly House, Port Louis, at 4.00 p.m.

The National Anthem was played

(The Deputy Speaker in the Chair)

PAPERS LAID

The Ag. Prime Minister (Mr L. S. Obeegadoo): Mr Speaker, Sir, the Papers have been laid on the Table.

A. Prime Minister's Office

Ministry of Defence, Home Affairs and External Communications

Ministry for Rodrigues, Outer Islands and Territorial Integrity

- (a) The Annual Report of the Rodrigues Regional Assembly for the Financial Year 2021/2022.
- (b) The Independent Broadcasting Authority (Amendment of Schedule) Regulations 2022. (Government Notice No. 308 of 2022)
- (c) The Independent Broadcasting Authority (Licence Fees) (Amendment No. 2) Regulations 2022. (Government Notice No. 309 of 2022)

B. Ministry of Finance, Economic Planning and Development

- (a) The Bridge Loan Facility Agreement between Government and Société Générale. (In Original)
- (b) The Annual Report 2021/2022 of the Central Procurement Board.

C. Ministry of Industrial Development, SMEs and Cooperatives

The Annual Report and Report of the Director of Audit on the Financial Statements of the Fashion and Design Institute for the year ended 30 June 2021.

D. Attorney General

Ministry of Agro-Industry and Food Security

- (a) The Annual Report and Report of the Director of Audit on the Financial Statements of the Agricultural Marketing Board for the year ended 30 June 2021.
- (b) The Small Farmers Welfare Fund (Amendment of Schedule) Regulations 2022. (Government Notice No. 310 of 2022)

E. Ministry of Blue Economy, Marine Resources, Fisheries and Shipping

The Annual Report and Report of the Director of Audit on the Financial Statements of the Seafarers' Welfare Fund for the year ended 30 June 2021.

PRIVATE MEMBERS' MOTION

ELECTRIC VEHICLES IN MAURITIUS

Order read for resuming adjourned debate on the following Motion of the hon. Ms J. Tour (Third Member for Port Louis North & Montagne Longue):

« This Assembly resolves that Government should continue its efforts to encourage the use of electric vehicles in Mauritius. »

Question again proposed.

The Deputy Speaker: Thank you very much. Hon. Mrs Luchmun Roy!

(4.05 p.m.)

Mrs S. Luchmun Roy (Second Member for Port Louis North & Montagne Longue):

Thank you, Mr Deputy Speaker, Sir. Once again, allow me to congratulate hon. Ms Joanne Tour for proposing such a bold and important motion: “This Assembly resolves that Government should continue its efforts to encourage the use of electric vehicles in Mauritius.”

Mr Deputy Speaker, Sir, the Government has been doing a lot since this motion has been tabled to the Assembly. However, before starting my speech, I would like to invite all the Members to take you down to the 1879. Mr Deputy Speaker, Sir, the clean energy has now, in 2022, reached a tipping point, and as at now that I am talking, there are 87 countries that have reached it. Solar power, electric cars, grid scale batteries, heat pumps, the world is crossing into a mass adoption moment for green technologies.

As I said it in my introduction, I will take you on New Year’s Eve 1879, where Mr Thomas Edison flipped the switch on the first building strung up with electric light bulbs. Maybe Members in the National Assembly might not know how and who invented the bulb, how did we get light and everything? So, it is always good to know about history. This is why I went and I found some nice, interesting articles as well.

In 1879, when Mr Edison flipped the switch on to the first building strung up with the electric light, the night turned into day and the revellers rang in a new age of electricity. Edison, at that time, was thinking way beyond bulbs. He planned an entire grid to carry power from coal generators directly into homes. It took another quarter century for electricity to reach the first 5%

of US households, but that proved to be a tipping point. By 1950, the entire US was connected and such a similar pattern was adopted gradually across the world. Then, this echoed around the world.

Today, there is a new Edison level transformation underway. It affects how we generate the power that flows to our electrical outlets and what gets plugged into those zero emission electrons. In an article on Bloomberg Green, it has identified tipping points for 10 clean energy technologies, from electric motorcycles to heat pumps and rooftop solar panels. New analysis shows which countries have crossed the threshold and how quickly those markets then expanded.

It all starts with the transition to clean energy, now approaching full speed with 87 countries drawing at least 5% of their electricity from wind and solar. The US has hit 5% in 2011 and surged past 20% renewable electricity last year. If the country follows the trend set by others at the leading edge, wind and solar will account for half of US power generating capacity just 10 years from now, that would be 10 years or even decades later. This is what has been the forecast of Bloomberg Green for the US.

With all the good technologies, there comes a time when buying old technology no longer makes sense. We think in the 21st century about the smart phones, the colour of key TVs in 1970s, even the gasoline-powered cars in Henry Ford's days. Successful technologies follow an S-shaped adoption curve. Sales move by the crawl in the early adopter phase, then, surprisingly, quickly once things go mainstream, the top of the curve represents the last people to make the transition.

Even now, in the year 2022, a tenth of humanity still does not have electricity and there are facts, Mr Deputy Speaker, Sir. According to the same article, it mentions 5% is not a universal tipping point, some technologies flip sooner, others later, but the basic idea is the same. Once the tough investment in manufacturing has been made and consumer preferences start to shift, the first wave of adoption sets the condition to go much bigger. By examining the countries that reached each tipping point first, we begin to get a sense of what to expect from those that follow.

Intermittent renewables tend to work better in combination. So, when the sun sets in Spain, wind from Denmark might make up some of the gap. But even their own specific types of renewable energy show distinct adoption curves. Deploying enormous wind turbines can be difficult, so adoption is more gradual. Solar cells, on the other hand, Mr Deputy Speaker, Sir, can

pop up just about anywhere once they are affordable, so growth after the tipping point can be more explosive.

According to the same article, I quote –

“One phenomenon underpinning the tipping points is known as the experience curve. Wind and solar are technologies, not fuels. So, the more panels and turbines are deployed, the better we get at making them. Every time the global supply of solar doubles, the cost of adding more installations declines by almost 30%, according to decades of data from BloombergNEF.”

As more countries tipped into mass adoption, wind and solar became the cheapest sources of new electricity capacity worldwide, according to BloombergNEF data. Cost declined so much that there is no longer the biggest obstacle to expansion. “Now it’s about permitting, interconnecting, central planning around grids,” says the head of clean power research at BloombergNEF.

Mr Deputy Speaker, Sir, the same article which is very interesting mentions about the need for giant batteries. The most difficult challenge in cleaning up the grid is providing flexible sources of power that can ramp up or down as needed. Most flexible generation today is provided by natural gas and coal. Only in the past few years did battery prices fall enough to compete from different countries. During a record heat wave in California, in September, batteries help prevent the black out by storing up excess power in the morning and then deploying it during the early evening hours when everyone got home from work and cranked up the air conditioners.

Plugging everything in, more than 70 countries have set targets to cut their greenhouse gas pollution to zero which includes China, the US and Europe. Those three biggest polluters and others aimed at net zero together account for more than 75% of the global emission. Reaching net zero goals required both cleaning up the power grid while expanding what gets plugged into it.

One of the biggest challenges is replacing fossil fuel boilers for producing heat for keeping warm manufacturing or farming in greenhouse. This is what is actually responsible for roughly half the world’s final energy consumption and the demand is greatest during winter

month when solar power is at its weakest. The solution is the electric heat pump, these devices are not new but they become cheaper and even more efficient with years.

Mr Deputy Speaker, Sir, heat pumps have already replaced about 20% of boilers in Europe saving consumers more than 100 billion in a year according to the data from European Heat Pump Association. The energy crisis brought on by Russia's invasion of Ukraine has made them all more attractive and installers cannot keep up with the demand and according to the EHPA Eurostat, it mentions that if you want to plan for winter you have to plan for winter 23. Nowak says no one in Europe wants gas in their homes now.

Mr Deputy Speaker, Sir, coming up to transportation now, transportation is responsible for a quarter of the world's energy consumption. As with heat pumps, the fuel savings for EV's often makes the total cost for ownership less than their fossil fuel alternatives even when the upfront sticker prices are higher. The US is the latest country to pass what has become a critical EV tipping point, 5% of new car sales powered only by batteries. If the US follows the trend established by 18 countries that preceded it, a quarter of new car sales could be electric by the end of 2025.

It is, therefore, reasonable to expect a similar EV tipping point around the world since most impediments are universal, not enough charges expensive sticker's prices, lack of consumer awareness as well. The 5% threshold is where these obstacles are evolving. Going to South Korea's adoption curve starting in 2021 ends up looking a lot like China in 2028. Both resembled Norway after its first touch 5% in 2013 then follows Canada, Australia and Spain. Solar panels are reflected in the windows of a Volkswagen EV at the company's plant in Germany, expanding the category from battery only cars to including plug-in hybrids. Hybrids are popular in Europe and the world has surpassed around 20 million electric vehicles on the road or roughly 2% of the total fleet.

Interestingly, the plug-in hybrids did not conform as well as the tipping point dynamic until reaching the 10% of new vehicles sales. The data shows that the dynamics for adoptions of EVs and hybrids combined as well as two wheelers, including motorcycles, it turns out that automakers have reached their tipping point where the threshold, whichever the EV output accelerates, this makes sense when considering the time and cost factories must be retooled to adapt themselves for the supply. And as far as we know right now, the Europe, for instance,

wants the 10% of an automaker's quarterly sales co-electric; the share of the EV triples is less than two years.

Mr Deputy Speaker, Sir, as I mentioned it, an effort today for a brighter tomorrow, this is what the Government is doing. In 2010 to 2019, average annual global greenhouse gas emissions were at their highest levels in human history, but the rate of growth has slowed. Without immediate and deep emission reductions across all sectors, limiting global warming to 1.5% is beyond reach. However, there is increasing evidence of climate action says scientists in the latest Intergovernmental Panel on Climate Change. Limited global warming will require major transitions in the energy sector. This will involve a substantial reduction in fossil fuel use, widespread electrification, improved energy efficiency and use of alternative fuel such as hydrogen.

Cities and other urban areas also offer significant opportunities for emission reductions. These can be achieved through lower energy consumptions such as by creating compact workable cities, electrification of transport in combination with low emission energy sources and enhanced carbon uptake and storage using nature. There are options for established, rapidly growing and new cities.

Reducing emissions in industry will involve using materials more efficiently, reusing and recycling products and minimising waste. For basic materials including steel, building materials and chemicals, low to zero greenhouse gas production processes are at their pilot to near commercial stage. This sector accounts for about a quarter of global emissions. Achieving net zero will be challenging and will require new production processes, low and zero emission electricity, hydrogen, and, where necessary, carbon capture and storage.

Agriculture, forestry and other land use can provide large scale emissions reductions and also remove stored carbon dioxide at scale. However, land cannot compensate for delayed emissions reductions in other sectors. Response options can benefit biodiversity, help us adapt to climate change and secure livelihood, food and water and wood supplies. Limiting warming to around 1.5° C requires global greenhouse gas emission to peak before 2025 at the latest and be reduced by 43% by 2030. At the same time, methane would also need to be reduced by about a third.

Even if we do this, it is almost inevitable, Mr Deputy Speaker, Sir, that we will temporarily exceed this temperature threshold but could return to below it by the end of the century. The global temperature will stabilise when carbon dioxide emissions reach net zero. For 1.5°C, this means achieving net zero carbon dioxide emissions globally in the early 2050s; for 2°C, it is in the early 2070s. This assessment shows that limiting warming to around 2°C still requires global greenhouse gas emissions to peak before 2025 at the latest and be reduced by a quarter by 2030.

Mr Deputy Speaker, Sir, since 2010, there has been sustained decreases of up to 85% in the cost of solar and wind energy as well as batteries. An increasing range of policies, laws have enhanced energy efficiency, reduced rates of deforestation and accelerated the deployment of renewable energy. Sea levels are rising and oceans are becoming warmer; longer, more intense drought threatened crops, wild life and fresh water supplies. From polar bears in the arctic to marine turtles off the coast of Africa, our planet diversity of life is at risk from the changing climate.

Climate change poses a fundamental threat to the places, species and people's livelihoods, and to adequately address this crisis, we must urgently reduce carbon pollution and prepare for the consequences of global warming which we are already experiencing.

Short-lived climate pollutants, including black carbon, methane, hydrofluorocarbons and tropospheric ozone, are powerful climate forces with global warming potentials many times that of carbon dioxide. These pollutants also significantly impact air quality, food, water, economic security for much of the world, both directly through their negative effects on public health, agriculture and ecosystem.

The measures and technologies to reduce short-lived climate pollutants are available today and are very practical, technically feasible as well and also cost effective. Putting them in place can bring immediate climate benefits, help achieve many global sustainable development goals and improve the health and livelihood of millions. It is not enough to act; we must act now and we have repeatedly been mentioning this in this House.

Delayed effort to mitigate either carbon dioxide or short-lived climate pollutant emissions will have negative and potentially irreversible consequences for global warming, rising sea level, food security, and public health.

Due to their relatively short lifetime in the atmosphere, ranging from a few days to a few decades, reducing short-lived climate pollutants can rapidly slow the rate of global temperature rise, complement efforts to mitigate carbon dioxide emissions and keep warming below 2°C.

It is very important to lay much emphasis on what we call the climate and the clean air. So far, Mr Deputy Speaker, Sir, with all the efforts, we can cut methane emissions by at least 40% and black carbon by up to 70% by 2030, and virtually eliminate 99.5 high global warming potential carbons altogether by 2050, which has been compared to the 2010 levels.

Reducing short-lived climate pollutants provides other significant benefits for us. These include –

- preventing millions of premature deaths annually;
- improving the food security by avoiding tens of a million of tons of annual staple crop loss;
- protecting vital ecosystem and the ecosystem services, reducing the risk of dangerous and irreversible climate tipping points, and
- making significant contributions to achieving the 2030 Agenda for sustainable development.

Widespread actions to reduce short-lived climate pollutants can prevent 0.6°C of warming by 2060. Cutting emissions of carbon dioxide and short-lived climate pollutants is critical to slow rate of global warming. Thus, achieving the 2°C target set by the Paris Agreement.

Mr Deputy Speaker, Sir, the Intergovernmental Panel on Climate Change (IPCC) found that pathways that limit global warming to 1.5°C must include deep reductions in all climate forcing emissions, including short-lived climate pollutants. A warmer climate increases public health challenges like heat-aggravated illness, increases in Vector-Borne diseases and decreases access to safe water and food. Cutting short-lived climate pollutants can slow the rate of warming and lower public health risk.

Short-lived climate pollutants like tropospheric ozone (O₃) and black carbon, a component of fine particulate matter or PM2.5, are also dangerous air pollutants. These are terms that we might not know, but these are terms with which we live in our daily lives, and these are

terms which our next future generation should get to know. This is why we are here talking about such a problem.

Well, Mr Deputy Speaker, Sir, reducing them will prevent millions of premature deaths each year from air pollution. The biggest benefit will be felt locally with the greatest health benefits that we are benefiting in the Indian Ocean. Rising temperatures threaten food security and this has been an alarming concern for not only Mauritius but countries across Africa. Increases in pests and diseases and more frequent and intense drought and flood reduce the availability of food. Heat stress causes poor yields or worse crop failures. Reducing short-lived climate pollutants gives us our best chance to rapidly limit global temperature rise and reduce the risk to food security.

Mr Deputy Speaker, Sir, there has been around 110 million tons in annual losses for the major staples like wheat, rice, maize and soya beans in the African continent. These represent around 4% of the total annual global crop production and up to 15% in some regions. Reducing methane, an ingredient which is very harmful for the ozone, can halve these losses and this can be reduced by billions per year.

Mr Deputy Speaker, Sir, there is no scenario for containing global warming for sure but we say it and we keep repeating it, that there is a possibility and there is an urgency to take the appropriate action. This is a sector which is often overlooked in the climate equation but it should not be currently responsible for 20% of the global greenhouse gas emission, and the rapidly increasing transport is something that impacts anyone, anywhere.

Transport is just like climate change. It is interrelated. This is what is bringing about the climate change as well. So, we should look at both of them; the climate change and the transport sector should go hand in hand. These two areas of global concern are inextricably linked. Accelerated and equitable climate action in mitigating and adapting to climate change impacts is critical to sustainable development.

Some response options can absorb and store carbon and at the same time help communities limit the impacts associated with climate change. For example, in cities, networks of parks and open spaces, wetlands and urban agriculture can reduce flood risk and reduce heat island effects. Mitigation in industry can reduce environmental impacts and increase employment

and business opportunities. Electrification with renewable and shifts in public transport can enhance health, employment and equity.

Somewhat quietly, electric vehicles are gaining traction across the world. I mentioned it from the report in Bloomberg. The world is about to pass another very, very important milestone in electric vehicle adoption: 20 million plug-in vehicles on the road globally, come June, according to the Bloomberg. That's remarkable growth from one million EVs on roads in 2016. In the second half of 2022, almost a million of EVs have been added to the global fleet according to Bloomberg. That's about one every three seconds which join our road.

Vehicles eventually get retired from the fleet due to age, wear and tear, crashes and battery degradation but that is not a big part of the EV's story so far, mostly because the majority of EVs in the global fleet were sold in the past 18 months. By the end of 2022, it is expected that we will be having over 26 million plug-in vehicles on the road.

Most of the world's plug-in vehicles are fully electric but there are also 5.3 million plug-in hybrids in Europe and just for Europe, it accounts for most of them right now. The plug-in hybrids have helped automakers meet Europe's increasingly stringent targets for reducing carbon emission from vehicles. At the BNEF, they are actually expecting the market to shift away from the plug-in hybrids in the coming years as governments cut subsidies for them and as automakers roll out their latest fully electric models. This is what Mauritius is paving its way for.

The transport sector is amongst the main energy consuming sectors in Mauritius. The transport sector contributes about 77.8% of the final energy consumption in 2017, adding up to the 26% of the total GHG emission in Mauritius in 2016. Mauritius is therefore driven to transition towards alternative greener which means we need to change, readapt ourselves in our means of transportation. Thus, contributing to the commitments made by the Government of Mauritius and the COP21 Summit in Paris in 2015.

To that effect, the Government of Mauritius decided to support electric vehicles in 2016 by abolishing excise duties. In addition, duty on hybrid motor cars has been brought down to 30% points for all cylinder capacity. However, to stimulate the transition towards electric mobility, the Ministry of Energy and Public Utilities has commissioned a study for a 10-year strategy with a roadmap which prepares the market conditions for a sustainable integration of electrical car.

With the overall objective being making a contextual assessment of the existing policy framework and infrastructure for electric cars in Mauritius, we need to identify the barriers relating to the financial constraints. The transition to an environmentally sustainable economy will take at least a generation if not a bit longer, Mr Deputy Speaker, Sir, and at the end of the journey, we will definitely say that we will not emerge with a pristine planet but at least we have tried and the goal is actually to minimise the damage that we, as human beings, inflict on the planet. The damage will never be eliminated for sure. We are very realistic but there are too many of us and too little planet to eliminate destruction. We need to understand our impacts and reduce them as much as possible as human being. Our principal goal should be to mitigate problems that are global in scale such as climate change, biodiversity loss, virus transmission and invasive species.

A critical element of the transition is to reduce our use for fossil fuel. Fossil fuels are expensive and environmentally destructive. In the United States, most of our use of fossil fuel is for the transportation. According to a report, in New York City, where they have a population density that supports a mass transit system, most of their fossil fuel use is to power their own buildings. In any case when they switch from fossil to renewable energy, they reduce, but do not eliminate any environmental damage. The current version of renewable energy such as solar cells and windmills do far less damage to the environment. Windmills can harm migrating birds, and solar cells require toxic substances to be manufactured. Battery technology currently requires lithium and other rare earth metals which must be mined.

No one should pretend that these technologies are perfect. So, if we come to this House and we say that we have got the alternatives, then, no, we are just trying to fool ourselves. We are not perfect and we will not find the perfect solution.

There was a report last year with regard to the New York's Time where Hiroko Tabuchi and Brad Plumer observed, I quote –

“Like many other batteries, the lithium-ion cells that power most electric vehicles rely on raw materials – like cobalt, lithium and rare earth elements – that have been linked to grave environmental and human rights concerns. Cobalt has been especially problematic.

Mining cobalt produces hazardous tailings and slags that can leach into the environment, and studies have found high exposure in nearby communities, especially among children,

to cobalt and other metals. Extracting the metals from their ores also requires a process called smelting, which can emit sulfur oxide and other harmful air pollution.”

Mr Deputy Speaker, Sir, we, on this side of the House, see electro mobility as a key part of the energy transition that the country has embarked on. The Government is advocating a low carbon mobility policy. The Government is promoting a low carbon mobility policy with an objective that is in line with its policy of reducing greenhouse gas emissions by 20% by 2030.

I must salute the leadership of the Prime Minister, hon. Pravind Kumar Jugnauth, in this ambitious move to respond to the ecological challenges and climate emergencies. Climate emergencies of our time - this movement calls, among other things, for an increased contribution of energy mix that is up to 60% by 2030, the elimination of 60% by 2030, the eventual elimination of coal in electricity production and push for electric vehicle on our roads.

The House will recall the commitment made by the Prime Minister at the COP26 few months back in Glasgow to the international community. This commitment reflects the vision of resilient, clean and sustainable development. The Government is committed to a sustained decarbonisation of the transport and power generation sectors and electricity generation without compromising our short and medium term of our production capacity in the short and medium term. We favour green growth which creates jobs and new economic activities and is in line with the climate requirements. Electric car technology offers considerable potential for reducing greenhouse gases and is a key pillar in the development of a green economy. The zero emission vehicles will revolutionise our modes of land transport. Mauritius has certainly not remained on the side lines margin and we are trending actually. Our motorists – whom I am sure are looking forward too – would be convinced that our people are looking forward to this with optimism and enthusiasm to the opportunity to run on green fuel.

The Government has introduced a number of policy measures at various levels to encourage the purchase of electric vehicles. In terms of taxation, electric vehicles have a lower excise duty rate than conventional and hybrid cars. Electric vehicles with the power of 180 kW are at a zero rate while those above 180 kW are charged at 15%. The road tax for electric vehicles is half an amount for a conventional amount for equivalent capacity. The bus fleet for its part is said to be modernised and above all, go green by abandoning thermal engine.

With the measures announced in the Budget 2021/2022, diesel buses have gradually given away to electric buses. The subsidies and other facilities granted by the State to public transport operators will be phased out. State financial resources would be redeployed to effort the electric fleet. The subsidies for the purchase of electric buses will be increased from 1 m. to 1.2 m. for 9-metre buses and from 1.2 m. to 1.5 m. for buses over 9 metres. Operators are eligible for leasing facilities under the Transformation Fund. According to the same Budget Speech, the CNT would procure around 25 electric buses to start the process of fleet renewal.

The Minister of Finance also proposed a whole scheme to encourage the purchase of fast chargers to power electric cars. Individuals can deduct expenses incurring for the purchase of fast chargers from their net income, expenses incurred for the acquisition for fast chargers, any amount not claimed in the given tax year can be carried forward and deducted from the net income in subsequent. Companies that have invested in fast chargers are entitled to a double deduction as we want chargers to reduce our national consumption for fossil fuel.

In 2021/2022 Budget, we introduced a flagship measure to make the zero emission mobility a reality in our country. With these measures, that is, the owners of electric cars can invest on photovoltaic system to power their chargers. Following this Budget announcement, the CEB has set up a CEB Solar PV Scheme for charging of electric vehicles for residential, industrial and commercial users who are connected to CEB low voltage grid. Under this scheme, the user can re-export any surplus of power generated on the CEB grid. In the initial phase of this plan, the CEB made provisions for 10 MW of cumulative photovoltaic capacity in its system.

This approach meets several sustainable and inclusive development objectives, increasing the share of green energy in the energy mix, stabilising the net CO₂ emissions from road transport and democratising the electricity production in the country.

The CEB also plans to offer the time of use tariff which will allow owners of electric cars to benefit from cheaper electricity prices during off-peak. We also note that the recommendation of the Pay Research Bureau to offer civil servants a loan at the Accountant General's to finance the purchase of cars or to finance motorised two-wheelers. The public sector has the opportunity to play a catalytic role in this new energy pattern and, of course, to accelerate the electric transition in the transport sector.

On the other hand, through the State, we have the potential to make a difference by influencing the car purchase decisions of civil servants and even more fundamentally, by transforming the car market through public procurement. There is a need for policy of positive discrimination in public procurement of vehicles by the Government and in the facilities being made available to public officials. In this regard, I would salute the decision and, of course, I would like to say hats off that the Government has set up an Interministerial Committee for a study which would really look forward to having electric cars to Ministers. I know there are a few Ministers who are already driving electric cars as well.

This Interministerial Committee which is chaired by the Minister of Finance, Economic Planning and Development, himself, hon. Dr. Renganaden Padayachy, has formed a Technical Working Group which looks into the logistical modalities of the new ecosystem, which is actually helping to pave the way towards more electric cars in Mauritius. They are coming forward with some priority areas which have been identified, like providing for an incentive framework for companies which include SMEs, and investing in battery charging facilities in different companies as well.

Also, this committee came forward with some recommendations such as assess the impact of the adoption of electric vehicles, how will this impact the State's finance taking into account that we are given certain allowances such as petrol and the allowances being paid to some other senior managers as well. There have been some proposed measures like to decarbonise the electricity grid and move towards a cleaner environment.

The technical team, when they met under the aegis of the Ministry of Finance, took stock of the situations, of the different constraints, of the different obstacles that might be challenging our way to a cleaner environment. It was said that the price of electric vehicles compared to conventional vehicles remains a major obstacle, that is, the tax and other tax facilities as well. It was also noted that the civil servants, for example, already benefit from tax-free facilities to buy a car and the duty-free attraction for electric cars therefore makes no sense to them. So, this is what came forward from that meeting.

It is true also that the very high cost of batteries is a factor which still weighs heavily on the price of electric vehicles. Almost a third of the price of the vehicle, that is, which is very small in number of electric models available, does not really encourage a widespread adoption.

Also, there are very few electric charging stations in Mauritius. Definitely, each and every year, you can see that some other stations are coming forward with some new innovative ideas as well and we need to work towards that, getting more charging points and, of course, the time it takes to charge the battery is longer than the time it takes to fill up with petrol. We all know that we are in a fast moving country 2022, everybody wants to go really quickly and everyone wants to be on the road really fast. However, this has been identified as one of the drawbacks of having an electric car because if you go on a station, you have to wait for hours to charge your car. It does not really motivate people to buy an electric car.

Electric car owners can also install chargers at their home but as we say it, to bring a change it always takes time. So, you need time and we need to educate the population about the benefit of having their own chargers at home to charge their own cars. But it must be also recognised that there are some solutions which have been proposed within the reach that we can do. We have been very realistic. Chargers cost between Rs70,000 and Rs1.5 m. depending on the capacity, which is speed of recharging, which is an important factor to be taken into consideration for motorists. Fast chargers are available but it costs quite an amount. Given these challenges, the Government intends to move forward with concrete ideas, to come up with concrete measures definitely to develop the necessary capacity in this sector, and I am definitely sure that this could be an emerging economic activity for our island.

We also identified that there are some reliable network of recharging stations that must be set up across the country, and for this, I strongly believe that there should be the participation of the private promoters and the CEB as well which would definitely offer the different facilities of transformer and connection facilities as well. The operations will be carried out under an arrangement between various stakeholders and a regulatory framework that the authorities will put in place. The stations will have to be equipped with photovoltaic panels to make maximum use of solar energy. Parking facilities, like we have so many shopping malls around, on those shopping malls and on those parking facilities as well, we encourage people to have photovoltaic so that they can charge their cars as well. So, this could be an idea that could come up for all those shopping malls and while you are parking your car, you are just charging your car as well. The CEB, as mentioned previously, has already put in place a scheme to encourage the installation of battery panels and to power home chargers as well.

So far, Mr Deputy Speaker, Sir, I am very positive about the recent technological developments when it comes to batteries and it is expected for a fact that in the next five years, it is expected that sodium-ion batteries, which are significantly cheaper than existing lithium batteries, would take over. And with these advances, the prices of electric vehicles are expected to drop significantly in the near future.

I would like to highlight as well that during the Budget 2022/2023, in the same wave, the same was proposed, and I would like here to quote in the different axes of priorities given in the Budget 2022/2023, which I think is worth highlighting again to remind the House that this Government is working relentlessly towards bringing a cleaner environment for our next generation. The Budget 2022/2023 sets up four priorities, that is, to boost up the economy and to bring something like we call *équilibre budgétaire* at macro-economic level. We need to make sure that everyone is part of it and we also mentioned about the transition towards greener energy.

In COP26, in October of the year before, the Prime Minister took the engagement that his Government is working towards reducing the effects by 40% by 2030. This is the Route 2030 as we say it. This objective, we have come forward - as I mentioned it previously - with a lot of different kind of incentives like *augmenter la part des énergies renouvelables à 60% dans l'électricité mix ; élimination graduelle du charbon dans la production du courant; recycler 70% des déchets dans les centres d'enfouissement; encourager l'utilisation des véhicules électriques ; appuis aux smart agriculture et programme de plantation d'arbres ; la transition énergétique. Le budget 2030 lance les grands chantiers de vaste transition énergétique et écologique pour la première fois.* This Government has given all its energy, all its efforts towards bringing a cleaner energy and all this is just, I quote –

«pour préserver notre sécurité énergétique, évoluer vers une low carbon economy et créer une nouvelle filière économique porteuse d'emploi, investissement et de croissance inclusive. »

Mr Deputy Speaker, Sir, all these details are available in the Budget 2022/2023 and I would like to, let us say, conclude on a good note that I found, an article which I would like to read to my friends here because I think it is very important. I remember my friend, hon. Ittoo, who spoke about Elon Musk who brought a new invention to the world of transportation.

However, this is good news for those who are fan of *automobile* as we say. We are going to have the world's first solar car going into production and it is going to be a passenger EV that can run with the solar energy, and I quote the article –

“The world's first solar car has begun production – a 4-5 passenger EV that hails a new chapter in automotive history.

The Dutch company Lightyear officially commenced assembly of its first vehicle, aptly titled ‘Lightyear 0’, becoming the first automotive firm to manufacture an electric vehicle that generates a realistic amount of charge via sunlight.”

So, just imagine that we have a car, we are driving around and it is charging with the sunlight. So, I think this is really very good, and –

“Taking advantage of as much body space as possible with their 5 curved solar arrays totaling 53 square feet, the Lightyear 0 (formerly the Lightyear One) charges wherever there is daylight, whether parked or on the move.”

So, I think this is the future and I think this is what we need to look forward to. So, having a car which charges with the sunlight and especially that is summertime right now.

Mr Deputy Speaker, Sir, I am almost done with my speech. I once again would like to congratulate my friend, hon. Joanne Tour, for proposing such a bold and important motion which goes like –

“This Assembly revolves that Government should continue its efforts to encourage the use of electric vehicles in Mauritius.”

The effort is on, we are on the right track, and as I mentioned it earlier, we are taking the most realistic route and we are being very practical as well.

I thank you all for your attention and thank you for listening to me patiently.

The Deputy Speaker: Thank you very much. Hon. Bodha, would you prefer that I give you the floor right now or you will come after break? You can have the floor though rarely you get an option. You are taking time to decide.

Mr Bodha: After the break.

The Deputy Speaker: So, we will break for 30 minutes.

At 4.51 p.m., the Sitting was suspended.

On resuming at 6.00 p.m. with the Deputy Speaker in the Chair.

The Deputy Speaker: Please be seated. Hon. Bodha, yes, please!

Mr N. Bodha (Second Member for Vacoas & Floréal): Merci, M. le président. D'emblée je voudrais remercier l'honorable Tour pour venir avec une motion qui suscite énormément d'intérêt et je vois aussi qu'il y a eu beaucoup de recherches de parts et d'autres et les discours, il y en a eu beaucoup. Pour ma part, je souhaiterais donc apporter ma contribution à ces débats.

M. le président, nous avons un pays, une petite île qui est extrêmement vulnérable au changement climatique d'un côté, de l'autre côté nous avons, nous ne le disons pas souvent, l'air le plus pur dans le monde. Et étant donné que nous sommes dans une situation extrêmement d'urgence, je pense que cette question de l'utilisation de la voiture électrique, des véhicules électriques relève d'une très grande pertinence parce que Maurice a le potentiel pour devenir un modèle pour le monde et de par ce fait, bénéficier de fonds d'agence internationale dans ce sens. C'est dans cette approche là qu'il faudrait aller, M. le président. Il faut une politique volontariste. Il faut une détermination. Il faut montrer la voie et il faut par la suite, aller frapper aux portes des agences internationales pour que Maurice devienne un modèle dans ce domaine-là étant donné notre situation critique de par la vulnérabilité par rapport aux changements climatiques et de par le fait que nous avons une industrie touristique, nous sommes une île paradisiaque connue. Maurice, donc, a une carte à jouer définitivement.

The hon. Member came with this motion that this Assembly resolves that Government should continue its efforts to encourage the use of electric vehicles in Mauritius. In 2017, a few years back, I inaugurated the first station where we could do the recharge of a car and that was at the Anjalay Station for a BMW car, which we called the i8; that was a few years back.

The problem, Mr Deputy Speaker, Sir, is that since then, we have not had a new network of stations where we can recharge our batteries when it comes to electric cars. In the world we see something fantastic happening today - and the other Members who have participated in the debate have lengthily mentioned this - there is a geometrical progression in the making and the adoption of the electric car in the world. In France, they are building about 1 million cars per

month and when we see the geometrical progression, we are going to reach about 77 million cars in the months to come. So, basically, we have, I think, gone beyond the tipping point, we have gone beyond the critical stage where the electric car is still a prototype though I would like to say that technology is advancing very fast.

I had a conversation with the BMW engineers and we have been told that, in fact, the battery is the most important component in the body of the car. But what is happening today is that the battery could be, in fact, made into pieces and instead of being in one block, it could fit in all the different spaces of the car, which will mean that tomorrow you are going to have the electric which is really going to look like a vehicle of the 22nd century because it is going to be *d'avant-garde* with the design. Already, we see the designs of cars have become fabulous and the design shows how technology is advancing, Mr Deputy Speaker, Sir.

The problem about Mauritius is that we still have only less than 1,000 cars in electric cars in the country. We have a number of incentives which have been given, but the question is how do we move, how do we become electric? How do we go electric in a country like Mauritius? I will address in the end the whole issue of public transport and electric buses because it was mentioned by hon. Mrs Luchmun Roy.

Now, technology is advancing very fast. We have batteries which at the beginning were batteries going to last for 7 years. Now, we are going to have batteries going to last between 10 to 20 years which will make the car even more efficient and cost worthy. So, we are really moving in the right direction as regards the world stage.

Mr Deputy Speaker, Sir, we need, first of all, I think, a road map to implement such a policy and the political will, not to leave it to the offer and demand. We need to charter the way. We should say, for example, that we have 1,000 electric cars today; in 5 years, we are going to have so many, in 10 years, we are going to have so many. For example, in France, there is a date saying that we are not going to produce and to use or to market a diesel or a petrol car in the country.

Il y a des pays qui ont choisi 2025, d'autres qui ont choisi 2030, d'autres qui ont choisi 2035, il faut que Maurice impérativement choisisse une date pour dire qu'on va cesser d'importer les véhicules qui vont utiliser l'essence ou le diesel. C'est pour cela que je dis qu'avant tout, ce n'est pas une question de lois du marché, mais c'est une question de politique

volontariste. Le gouvernement doit donner l'exemple. Par exemple, on a parlé des voitures des ministres qui seraient des voitures électriques. Eh bien, le gouvernement a une flotte à elle ! Quand je regarde la flotte de tous les grands ministères, quand je regarde la flotte de tous les fonctionnaires, il faut une politique volontariste du gouvernement disant que oui, nous allons passer à 20%, 30%, 40% de véhicules électriques dans les années qui viennent. Il faut aller dans cette direction. La CNT, qui est aussi donc une compagnie paraétatique, - je vais dire un mot la dessus tout à l'heure - devrait montrer le chemin.

So, we need, Mr Deputy Speaker, Sir, a road map to implement such a policy. We need the political will, we need to have clear objectives, and we need to have the budget to do that. *Ce n'est pas une question d'incitation. À la limite, il faut être dirigiste, il faut être volontariste. Je me souviens des voitures des ministres dans les années 83. C'étaient des BMW série 3, des petites voitures. Après, on est passé à la série 5. Après, on est passé à une voiture tous les cinq ans, après à quatre ans, on en est à trois ans. Mais le gouvernement doit démontrer, c'est le service public qui doit démontrer que nous avons une volonté pour aller dans la direction des véhicules électriques.*

So, we need a road map to implement such a policy and we need to have a national taskforce involving all the stakeholders to achieve this goal. The first stakeholder is the public sector, it is the Government itself. We have the users, the consumers, we should be able to educate them, we should be able to encourage them to go in that direction. We should have the car importers and the dealers onboard. We are having a lot of hybrid cars which are being imported second hand. How do we handle this?

Pour moi, il faut absolument une stratégie de développement de la mobilité propre, qui demande, dans un premier temps, un état des lieux actuellement ; combien de véhicules y a-t-il dans le service du gouvernement, l'âge des véhicules, combien de ces véhicules pourraient être remplacés dans les cinq ans qui viennent. Il faut un état des lieux, il faut maîtriser la demande. Sinon, on va rester à 1,000, à 2,000, à 3,000 voitures. Et nous avons 600,000 véhicules à Maurice, M. le président ; donc à peu près 300,000-350,000 de voitures individuelle.

If we really want to have a quantum leap, we should show the way and we should be able to have the policy. Donc, il nous faut maîtriser la demande de la mobilité, il faut encourager et vulgariser la technologie pour dire qu'elles sont les voitures qui sont aptes, qui sont les

meilleures voitures pour Maurice. Et puis, il faut optimiser le fonctionnement des véhicules et les réseaux. Maintenant les réseaux sont les réseaux de recharge. Comme je l'ai expliqué, cela fait à peu près trois ans à quatre ans, et nous avons très peu de pompes, très peu de bornes où nous pourrons éventuellement recharger nos voitures.

Mais quand on est en train de voir ce qui se passe en France, ce qui se passe en Europe, ce qui se passe en Corée du Sud, il y a une politique volontariste et il y a un réseau au niveau du territoire. Parce que cela a été soulevé par Mme Luchmun Roy, le temps de la recharge et le lieu de la recharge, on peut faire cela chez soi, mais quand va-t-on le faire ? Il suffit qu'on aurait oublié le soir d'allumer le commutateur, et qu'est-ce-qui se passe ? Le lendemain la voiture est à plat. On ne peut pas rouler. Et il y a aussi la mobilité, c'est à dire on peut rouler 300 km, 400 km, et c'est extrêmement important. Donc, il y a tout un ensemble qui doit aller de pair. Regardez, par exemple, quand on avait les smart phones, pour la recharge, on a standardisé la recharge, il y a Apple et il y a les autres. Il faut, de la même manière, standardiser les bornes pour que toutes les voitures, quelle que soit leur marque, puissent utiliser ces bornes, puissent utiliser nos réseaux. Et quelle que soit la voiture, on peut, à ce moment-là faire la recharge à la maison. Donc, c'est une façon de vie.

It is like changing totally the way we drive the car, the way we take care of the car. Today, before going to sleep, we put the phone on charge. In the morning, the first thing, of course, we will see what are the messages. But for the car it should be the same.

Alors, donc, il y a une éducation. Sinon, qu'est-ce qui va se passer ? Il y aura un laisser-aller, il y aura des voitures électriques, il y aura une compétition au niveau des marques, on va passer de mille à deux milles. Non, l'idée c'est d'arriver à cent milles dans dix ans. Et comment on arrive à cent milles en dix ans ? Là maintenant, le ministre des Utilités publiques devrait voir quelle est la demande en électricité pour fournir les cent mille voitures parce que les avantages des véhicules électriques sont réels. Premièrement, le gouvernement est en train d'offrir partout des subsides pour faciliter les consommateurs. En France, par exemple, vous venez déposer votre voiture diesel ou essence et vous repartez avec une voiture électrique. C'est une compensation, c'est une incitation.

Deuxièmement, nous sommes en train, bien sûr, de diminuer l'importation en matière de produits pétroliers. Aujourd'hui, l'essence coûte énormément. Tout le monde le sait, tout le

monde est en train de crier. Aujourd’hui, nous dépensons deux milliards de dollars pour importer les produits pétroliers. Donc, si on peut amener une réduction de ces importations, ce serait bon pour le pays.

So, you have low emission commuting. Now, you have significant cost savings on running and maintenance. La voiture électrique, au fait, a moins de pièces que la voiture classique. Donc, la maintenance de la voiture électrique peut se faire plus facilement. Il y a au niveau, bien sûr, de la consommation, tout le monde le sait, on va consommer de l’électricité qui coûte beaucoup moins cher que les produits pétroliers en dépit des moteurs à injection parce que les compagnies pétrolières ont beaucoup fait ces derniers temps avec les concepteurs des voitures pour qu’on utilise peu d’essence pour aller loin.

M. le président, si en 1973 quand il y a eu le premier choc pétrolier on avait pensé électrique, on aurait été très loin aujourd’hui. Peut-être la moitié de la flotte Européenne ou mondiale serait électrique. Mais qu’est-ce qui s’est passé, le lobby des compagnies pétrolières, c’est un lobby extrêmement puissant ; c’est des milliards. Et il y eu des milliards qu’on a injectés dans la prospection et l’exploration. Il y a beaucoup de pays qui en 1973 ne produisaient pas le pétrole, comme l’Angola et le Venezuela, qui sont devenus par la suite producteurs de pétrole. Donc, le lobby pétrolier est un lobby extrêmement puissant. Ce qu’il faudrait – ça c’est sur le plan international – que les lobbies pétroliers puissent fonctionner avec les producteurs d’électricité pour qu’ils acceptent justement qu’on passe d’une voiture à essence et à diesel, à une voiture électrique.

La semaine dernière, Exxon, la grande compagnie Américaine a déclaré des profits mirobolants. Ils sont en train de payer treizième, quatorzième, quinzième mois parce que les profits sont énormes pendant la Covid. Donc, il y a un problème avec le lobby pétrolier. Et c’est le lobby pétrolier qui a retardé la marche du véhicule électrique, M. le président.

Mais comme d’autres l’ont dit, I think we have come to tipping point. I think we have come to the critical mass and we have to see how to implement this in Mauritius. Other advantages, of course, it is eco-friendly; it is savings on CO2 emissions and the noise pollution – you know how an electric car works. You have incredible driving experience by reducing driving fatigue and stress; the electric car is amenable to this. You have convenient charging – well, the charging is a major issue. And the charging should be one of the issues where the Government,

the private sector and the public sector should work together with the petrol stations and with the other stations to be able to provide a network which will be able to provide a facility to everyone in Mauritius.

I have talked about the tax benefits that the Governments are giving and I think that we should continue in that process. And, as I said, the most important thing is to have a roadmap; to have the political will; to have the objective saying that we should move from one thousand to so many thousands of cars/vehicles in the years to come.

M. le président, je souhaiterais dire quelques mots sur le transport public. One of the areas where the Government can have a say and show the way is in the field of public transport. The Minister of Land Transport recently said that we are carrying about 400,000 passengers a day which means that our system caters for 400,000 passengers a day. We have 2000 buses; one third of these buses are owned by individual operators; one third owned by the CNT and the other third owned by companies around the island.

Now, when we see the fleet of the buses, we still have buses which are 20 years old. And the average would be around 10 to 15 years. So, how do we move from a public transport based on diesel to a public transport based on green transportation? How do we do that? That is where the Government comes in. And if the Government has a bold policy, it should be able to find funding agencies to be able to provide the subsidy for the electric buses.

Now, let me give you an example, Mr Deputy Speaker, Sir. When we had high-floor buses, the buses were costing about Rs2 m. and they were built in Mauritius. The subsidy was Rs1 m. and in the year before 2014, the Minister of Land Transport, then, came with the concept of semi-low floor buses. And a law was passed in Parliament, here, saying that all buses, henceforth, should be semi-low floor. Now, a semi-low floor bus costs about Rs3 m. and the subsidy was still Rs1 m. Do you know what happened? Only some of the companies and only the CNT bought the semi-low floor buses; the private companies did not buy a single semi-low floor bus for at least 5-6 years. It is only now that from time to time you are having one semi-low floor bus but still in diesel.

Let us now come to the electric bus. The cost of an electric bus, Mr Deputy Speaker, Sir, is Rs9 m. to Rs10 m. The subsidy - and that was mentioned by hon. Mrs Luchmun Roy - for a bus which is less than 9 metres is Rs1.2 m., and for a bus which is above 9 metres, it is Rs1.5 m.

Who will invest Rs9 m. to buy an electric bus for the public transport? Nothing can be done. Now, if we want to have 2000 electric buses for our commuters in the years to come at Rs10 m., it is Rs20 billions of investment, Mr Deputy Speaker, Sir.

Now, in 2018, further to the COP Regulation, the plan of how to fight climate change and green transportation was considered as a priority, we made a request for 200 electric buses and we went to the UN funding agencies to say: 'Listen, we want to have green transportation in Mauritius and to start with, we would like to have 10% of our fleet being green and we would like to have 200 buses'.

So, I would like to ask the hon. Minister of Transport – I do not know if he is participating in the debates, most probably he can answer where we have reached as regards those requests for 200 buses. The CNT has bought a few electric buses but they are small buses and they cost 6 m. The Government will not be able to invest billions in buses. So, the only way for Mauritius is to show that we want to be a model and to go to the international funding agencies to say: 'give us the possibility, the funding for us to be a model because we also we are not only having the political will but we are also funding part of it'. Then, the private companies, the CNT can move on from the diesel buses to the electric buses.

And I would like to say, Mr Deputy Speaker, Sir, that we should have a target date. We should have a target date to say that: 'listen, we are going to move from diesel buses to electric buses and that will change dramatically the whole concept of green transportation in Mauritius because we are commuting 400,000 people every day'. So, this is my contribution, Mr Deputy Speaker, Sir. Technology is going very, very fast; lithium batteries at the beginning were for less than 7 years, now it is between 10 to 20 years. Technology is going very fast. So, the cost of the electric vehicle is going to be more and more competitive but the question is that there are three issues –

- (i) First – what will the oil companies, the lobby, do to fight this because they are going to compete with electric vehicles?
- (ii) Second – what is the Government going to do? The Government has to show the way.

- (iii) Third – how is the common man going to react; how is he going to use the individual car; whether he will go for electric?

The individual car, Mr Deputy Speaker, Sir, will continue to be extremely – comme on l'a dit, le véhicule individuel restera indispensable pour de nombreux usages. Donc, il faudra savoir comment faire de sorte que demain le citoyen moyen puisse faire un choix naturel. Le choix doit être un choix naturel et un choix commercial et économique. Deuxièmement, nous avons aussi le transport public, j'en ai parlé. Et puis, il y a le transport des marchandises. Le transport des marchandises, c'est-à-dire les gros porteurs, les camions routiers qui transportent énormément de marchandises et de biens tous les jours. Comment pourrait-on passer du diesel au transport vert ? So, these are my contributions.

Now, I have a number of questions to ask –

- 1) Do we have enough choice when it comes to electric vehicles? Do we have enough brands for all budgets? Today, you can have a small car for less than 1 million – 500, 600, 700 – because the electric car is coming on a market which is wide as regard to range; as regard to engine capacity and as regard to make – *une petite BMW, une petite Kia, ce n'est pas la même chose.*
- 2) Secondly –
 - (i) How do we engage the petrol stations?
 - (ii) How do we equip them?
 - (iii) What are the incentives that we are going to give them so that we have a network which is a national network?
 - (iv) What will be the role of the CEB to be able to provide the electricity wherever needed?
 - (v) Whether those who are going to produce their own electricity at home will be able to use it for their car?

And there is also something else - that the electric car does not need the same maintenance and the same *garage de réparation que la voiture classique* and this will have an impact on jobs, on garage, job losses because the electric car, I would say, *est beaucoup plus solide et dans le*

temps, durera plus de temps parce que ce sera aussi recyclable. Donc, nous allons vers une modification complète de notre façon, de notre industrie de l'automobile.

Now, we need, as I mentioned, the Energy Action Plan and I hope that the hon. Minister will answer. How far will solar energy – because this was also raised by some of the hon. Members on the other side of the House – how do we see to it that the solar energy can be used at the level of the CEB, at the level of the citizen at home for his own car? And, what I would also like to see is with regard to the way we drive, the way we handle the electric car, it is a totally new system and it is totally something which we will have to be able to address.

Now, we have the issue of disposal of electric batteries. How are we going to begin another environmental issue and also, how do we control the quality of the battery? Who advises the common man that this battery is in a proper condition and you need to have it serviced; you need to have it monitored on a regular basis? So, these are the issues which I wanted to address, Mr Deputy Speaker, Sir.

My main argument is: the Government should show the way with clear objectives, show the political will, find the funding locally and internationally and become a model for the world to say that this island really wants to go green when it comes to green transportation. And this is our aim; this is our objective, this is our action plan and not come in a budget with a shopping list saying that – ‘we are going to do this, we are going to do that’ and we leave it to the citizens. Because it is the Government which should show the way by its own ministries, by its own leadership; show the way that we want to go green. And I think that if we do that, Mauritius will have an extremely interesting future when it comes to electric vehicles, and I am sure that we can do it, Mr Deputy Speaker, Sir.

I thank the hon. Member for bringing this subject, this topic in the House so that we can at least participate in the debates.

Thank you so much, Mr Deputy Speaker, Sir.

The Deputy Speaker: Thank you very much. Hon. Ms Naveena Ramyad!

(6.30 p.m.)

Ms N. Ramyad (Third Member for Vieux Grand Port & Rose Belle): Hon. Deputy Speaker, Sir, let me first and foremost thank you for giving me the opportunity to lay my voice to such an important debate.

Tonight, the Private Member's Motion states that this Assembly resolves that the Government should continue its efforts to encourage the use of electric vehicles in Mauritius. So, in the same vein, I want to congratulate hon. Ms Joanne Sabrina Tour who laid that Motion on 17 December 2021 and it was debated by the following hon. Members who all had interesting inputs: hon. Mahomed, hon. Ittoo, hon. Mayotte, hon. Collendavelloo, hon. Luchmun Roy, and hon. Bodha just before me. I appreciate the inputs of each and every Member as it lays down the scope and the future analysis to prove in and to address before embarking on a full fledge fleet of electric vehicles in the country.

Hon. Bodha just mentioned that we need a roadmap to pave the way to the adoption of electric vehicles in Mauritius. True, very true, hon. Member, and this is why in January 2020, the Government has published a Ten Year Electric Vehicle Integration Road Map and this is available to the public on the website of the Ministry of Energy and Public Utilities. Same has been worked out in close consultation with various stakeholders including the Ministry of Land Transport and Light Rail and the National Land Transport Authority amongst others. Now, when I look at the road map, I see that the Consultant was commissioned by the Ministry, with EV Consults and ECOVIS Ltd as Consultant and with experts in the field from abroad.

So, I will definitely, during my intervention, refer to excerpts of the road map to indicate that we are going steadily but continuously towards the adoption of the principle to integrate electric vehicles in our landscape. I will definitely cover this topic of utmost importance later. The road map defines all the strategies in real time options to reach our objective of achieving more in lesser time.

But for now, as I embark in the debate today, I would like to start with a small history about the importance of a means to move and why should we move from one place to another because we are talking about moving electrically. It is always good to dip in some historical perspective to assess if it may or may not succeed in the future. Mobility appears to be a

distinctive human attribute. Moving ourselves, things and ideas have always been at the heart of human development.

During 95% of the 200 millennia humans have existed, we literally walked the Earth and moved around as hunters and gatherers. Our bodies were designed for long distance walking and running on the savannah and it has been claimed that the most important invention ever was the bag. The one thing that made humans exceptional, apart from our ability to jog, was the ability to communicate, enabling effective cooperation. Lacking physical strength, our early evolutionary advantage was the ability and will to cooperate and share. The bag made it possible to bring home the catch of today and share it with the group. Similarities in the design of early stones found in different geographical areas showed that the long distance transport of goods, the diffusion of ideas and maybe even trade have been around for long time. The agricultural revolution, the emergence of settled societies and specialisation amplified the volume and importance of trade and transport.

As a complement to walking, draught animals were domesticated and placed in front of carriages. Over the centuries, rowing boats and sailing ships opened new pathways for communication and exchange along the waterways of the world. In the 18th century, large sailing ships transported the raw materials and products of the British textile industry, generating capital to be reinvested in the embryonic industrial economy. The invention of the steam engine meant that chemical energy could for the first time be transformed into motion beyond the bodies of humans and animals. With coal fired factories, trains and ships, the industrial revolution became a reality.

In the 19th century, local and global trade and travel escalated rapidly changing both power relations between nations and the lives of the ordinary people. Electricity systems were developed in the second part of the 19th century, as hon. Mrs Luchmun Roy just described, enabling new communication technologies in the form of telegraphs and telephone, providing light to growing cities and powering short distance vehicles such as trains. This is the important aspect that I wanted to come to. The electrified horseless carriage, that is, the electric car followed shortly after. However, in the 1920s, internal combustion engine vehicles drove the elegant electric vehicles out of the market. People increasingly wanted to travel beyond towns and Henry Ford's assembly line meant that the Model T fell in price every year. The subsequent

coevolution of ICEVs and oil extraction and refining changed the way wars are fought, the way cities are built and the way we arrange our daily lives.

In 2010, petroleum oil still accounted for more than 90% of the energy used for transport. Meanwhile, electric motors continued to develop and conquered steam engines and internal combustion engines in numerous applications. Batteries, first applied in the telegraph system of the 19th century, entered an era of massive diffusion towards the end of the 20th century as they coevolved with the electronics industry and the ubiquitous deployment of information and communication technology.

Despite the failure of the early electric car, transport technologies were slowly becoming more dependent on electricity. Rail transport underwent a shift from steam and horse to electricity. During the 20th century, various electric subsystems were added to ICEVs, ranging from the electric starter in the 1910 to modern computer based control and entertainment systems.

In the early 21st century, humanity faces a dilemma. While our demand for mobility and transport continues to increase, we are challenging nature's capacity to support this growth. The people now walking the Earth are thousand times more numerous than the hunters and gatherers in pre-agrarian times. And to bring home the catch of today, the walk across the savannah has been replaced with commuting by car and intercontinental flights. Oil powered ICEVs deplete limited resources, pollute the cities of the world and contribute to climate change at an increasing pace. The overarching question we pose now is whether the continued electrification of mobility, that is, electro mobility can resolve this dilemma.

So, now, I will get into the technical part of my input in the debate – the climatic and the environmental benefits and impacts related to electric vehicles. Conventional cars with internal combustion engines are still a major source of air pollutants such as carbon dioxide, nitrogen oxides, black carbon and fine particulate matter. Some of the emitted pollutants cause severe health effects including premature mortality. The World Health Organization presently considers PM2.5 mass as the most relevant indicator for assessing the impact of air pollution on human health.

Although ultra-fine particles are often blamed for causing health effects, coarse particles from tyre and brakeware could be implicated as well. In urban areas, the contribution of

conventional transport, PM2.5 concentration, is relatively large. Direct emissions of ICE cars have an effect on public health as well as on crops, buildings and the natural environment. From an environmental point of view, the replacement of ICE cars with electric vehicles may be beneficial for the climate because of the possible reduction of greenhouse gas emissions particularly carbon dioxide.

On the other hand, EVs are also not 100% clean. When EVs are charged, the electricity required is produced by a wide range of different power plants. So, when we have to create the balance, it is always good to take both of them when talking about electrical vehicles; we have to create a balance in the integration of both types of system, ICEVs and electric motors. When EVs are introduced in the car market enterprise ICE cars, the emission of air pollutants will increase at the site of the power plants while the emissions of local road pollutants, often urban, will decrease. As I said earlier, this is why it is important to look at the balance when we talk about electric cars.

Let us see the global image of EV development. Globally, the optic of electric vehicle is being supported because it offers an attractive opportunity for the reduction of carbon dioxide, improvement of local air quality, reduction of dependency on fossil fuels and creation of new economic opportunity. In 2018, the global electric fleet exceeded 5.1 million vehicles and the number of electric cars sold almost doubled. The battery prices have adopted significantly and almost all car manufacturers have a growing number of EV models lined up. The higher energy efficiency and lower running cost compared to internal combustion engines indicate that EVs will take a growing position in global car sales.

The Deputy Speaker: Just watch out. Don't go too close to your mike so that...

Ms Ramyad: Okay.

The Deputy Speaker: ... it is going to be easier.

Ms Ramyad: Okay.

The Deputy Speaker: Take your time, relax!

Ms Ramyad: Yes. The charging of an EV is generally done where the car is parked. So, chargers are installed at home and at the work place with occasional top ups at fast charging stations. The electric vehicle's battery has a minimum life span of 8 years according to most

vehicles' warranties. After use in the vehicle, the battery can be used for another long period as stationary storage to support the energy transition.

Another option is to revitalize or recycle the battery. So, having given a global perspective, let us now come to our local context. When we look at the key statistics of Mauritius, it demonstrates that for an area of 2007 km² and a population of 1.3 million, the total primary energy requirement is 1,603,000 tons of oil equivalents grown at an annual rate of 5% over the last decade: 79% from non-renewable sources, 21% from renewable sources, 55% independent power producers, 43% CEB. And in 2016, there was a 3.8% increase, that is 3,042 gigawatts and in 2019, the peak period demand was 467 megawatt in summer. The energy consumption from land transport is 37%. The carbon emissions from energy consumption, of which from land transport are 25.3%. The total number of registered vehicles was 562,202 as of March 2019, of which 312,000 cars compared to 359,406 vehicles in 2008, and the car sales is 11,000 new cars sold per year, of which 9,000 reconditioned car imports. So, this is the local statistics as we have it today. The road transport is currently one of the main forms of inland transport in Mauritius and is constantly growing.

Congestion has become a major challenge for the country and increased use also contributes to road deterioration. Today, 15 km to 20 km journeys by car typically take over one hour during peak periods. If we refer to the green economic assessment of 2015, it has been recommended in the report that the efficiency of vehicles should be improved whereby it has been mentioned that the local development and adoption of cleaner energy for motor vehicles is another area of opportunity that needs to be incentivised. This includes facilitating the use of bio-fuel and liquefied natural gas in public transport and supporting the use of hybrid and electric vehicles. This can be stimulated by requiring the next generation of public transport vehicles to use cleaner fuels.

Mauritius, like other modern societies, are conscious of the impact of climate change and are looking to increase their own independence and energy security by considering studies onto uptake of EVs in Mauritius. For a small country like Mauritius, EV technology is well suited as the driving ranges are short. Because of the size of the island, Mauritius fits well with the introduction of battery vehicle, electric vehicle. The combination in the long run with production of renewable energy through solar charging during the day is theoretically the ideal solution. The

current electric mix on Mauritius consists of 20.9% of renewables, as stated, and is characterised by a relatively high emission factor of 0.897 kilogram carbon dioxide per kilowatt, the yearly average.

In line with the Government ambition to increase the share of renewables in the electric mix, the emission per kilowatt is expected to drop towards 0.800 kilogram of carbon dioxide per kilowatt in 2030. Now that we are talking about small countries - Mauritius being a small country and part of SIDS - I thought that it is good that we include the overview about how SIDS are adapting to this change. SIDS are unique in their drive to reducing GHGs. Since these countries need to be self-sufficient in energy, there is a dilemma on the best way to reduce GHG while maintaining energy security. One way would be to drive the implementation of EVs for the transportation sector. However, this can wreak havoc on the SIDS' electrical network if not done properly.

This is why all along, I have been saying that this needs to be done slowly and thoughtfully and the roadmap by the Ministry of Energy takes all these in consideration; an electric car roadmap for the rainbow nation worth the title. Various processes are there to allow for smooth EV penetration in SIDS. This starts from forming a policy framework for the importation of vehicles, development of local standards and policies, usage of controller devices to prevent overloads and machine learning algorithms for optimised scheduling. Adopting this type of model can allow for smooth strategic transition to full EV penetration for SIDS in the future. Short and medium term solutions include using charged controlled techniques to ease EV penetration demand while long term planning includes infrastructure updates.

I will now take the different examples that the Mauritian Government is taking to reach that potential. Coming back to our local context, it is important to point out several measures taken by Government for the electric vehicle integration.

First of all, as I mentioned, the '10-Year Electric Vehicle Integration Roadmap for Mauritius' that has been prepared and available on the web site of the Ministry of Energy.

Secondly, the Cabinet, at its meeting held on 27 November 2020, agreed to the adoption of the '10-Year Electric Vehicle Integration Roadmap for Mauritius' and to the setting up of an Electric Vehicle Implementation and Monitoring Committee comprising members from different

Ministries and parastatal bodies and the Business Mauritius, under the Chair of the Ministry of Energy and Public Utilities to monitor the implementation of the roadmap.

Four Sub Committees were set up under the main Committee to provide recommendations on short and medium term action plan as recommended in the roadmap –

- (a) Sub Committee A which is the medium to facilitate the setting up of the charging network;
- (b) Sub Committee B for the financial incentives and green loans;
- (c) Sub Committee C for the national battery plan, and
- (d) Sub Committee D for the awareness and training.

The fourth measure is the representative of the Ministry of Land Transport and Light Rail is a member of the four subcommittees.

With a view to encouraging the adoption of electric vehicles, Government is providing a number of incentives. In the Budget Speech 2021-2022, as stated by my good colleague, Mrs Luchmun Roy, electric vehicles up to 180 KW are exempted from import excise duty while only 15% import excise duty is applied on electric vehicles above 180 KW. Further financial incentives are obtained from the MOFED. In the PRB Report of 2021, the interest rate for the purchase of an electric vehicle has been lowered to 1% as compared to 3% interest rate for the purchase of a conventional vehicle. And CEB has recently launched a Solar PV Scheme for charging of electric vehicles whereby it will allow EV car owners to generate electricity and sell to the CEB.

Sixth measure - the Government has also agreed that each Ministry/Department and local authority should have, at least, for the time being, one electric vehicle in their respective transport fleet. In this connection, needful is being done to finalise relevant regulations and schemes to facilitate this measure.

Now, if we go to the other international incentives, there is the cooperation of the Government of India in the field of electric mobility. Virtual meetings were held for the first time on 07 September 2021 with the Indian Authorities comprising the –

- (a) Ministry of External Affairs, India;

- (b) NITI Aayog which is an Indian agency acting as a think-tank for India, and
- (c) The High Commission of India in Mauritius.

Discussions focussed on the deployment of electric buses in Mauritius and setting the required ecosystem for the operation therefore. It emerged being given that around half of the fleet of the National Transport Corporation is nearing normal replacement age; NITI Aayog was approached to also consider including fleet replacement of the NTC under this assignment.

We go to the eighth measure; in the context of the decarbonisation of the transport industry, the Government of Mauritius proposed to gradually replace diesel propelled buses with electric powered vehicles. The Chinese Authorities intended to provide Mauritius with a grant of 100 million RMB as a kind contribution in order to financially assist Mauritius in sourcing some 80 electric buses from China along with the associated charging stations.

Ninth, there is an introduction of a Bus Modernisation Scheme, amongst others. As I see the time, Mr Deputy Speaker, Sir, I will conclude.

The Deputy Speaker: You will conclude or you will continue next time?

Ms Ramyad: I think I better continue next time.

The Deputy Speaker: You will continue next time?

Ms Ramyad: Thank you.

The Deputy Speaker: Thank you very much. I will call upon the hon. Acting Prime Minister for his Season's Greetings.

SEASON'S GREETINGS

The Acting Prime Minister (Mr L. S. Obeegadoo): Certainly, Mr Deputy Speaker, Sir, as this is the last Sitting for the year and with your permission, in keeping with the tradition, I wish, on behalf of the hon. Prime Minister and Leader of the House, to say a few words before moving for the adjournment of the House.

Mr Deputy Speaker, Sir, as the country gathers momentum on the path to economic and social recovery and steers to course towards greater resilience, the National Assembly has continued to play a critical role at the heart of our democracy and in the best interest of the Nation at large.

Mr Deputy Speaker, Sir, this year and as at date, we have had 32 Sittings of Parliament. Government has introduced before the House 19 Bills of which 18 have already been passed. In addition, two Bills, namely the Town Planners' Council Bill and the Revision of Laws (Amendment) Bill, introduced last year, were also passed earlier in the year.

Government has in, 2022, replied in the House to 629 Parliamentary Questions, of which 619 required oral answers and 10 written answers. This is quite apart from answers to questions which could not be reached and which have been answered in the written thereafter.

In addition, Government has replied to 20 Private Notice Questions from the hon. Leader of the Opposition and also responded to numerous queries during the Committee of Supply on the Appropriation Bill 2022-2023.

Mr Deputy Speaker, Sir, pursuant to the provisions of the Standing Order 68, two Sittings have also been held for the House to transact private business, in other words, to debate Private Members' Motions.

Mr Deputy Speaker, Sir, I would like to extend my thanks to Mr Speaker and to you also, Mr Deputy Speaker, Sir, for having presided over the deliberations of the House. My thanks are also extended to the hon. Deputy Chairperson of Committees who assisted in chairing the Committee of Supply on the Appropriation Bill 2022-2023.

I wish, moreover, to acknowledge the valuable contribution of all hon. Members to the debates in the House. Our gratitude, of course, also goes to the Clerk, the Deputy Clerk, the two Clerk Assistants and all the officers of the National Assembly, including the Serjeant-at-Arms and his officers, officers of the Solicitor General's Office and all civil servants for their part in the discharge of parliamentary duties.

Mr Deputy Speaker, Sir, may I, on behalf of the hon. Prime Minister and in my own name, request you to extend Season's Greetings to His Excellency, the President of the Republic and Mrs Roopun, as well as to His Excellency, the Vice-President of the Republic and to Mrs Boissézon, and to their respected families. I would like to convey to Mr Speaker and to his family, and also to you, Mr Deputy Speaker, Sir, and to your family, our very good wishes for a Merry Christmas 2022 and a Happy New Year 2023.

I also extend my good wishes to the hon. Leader of the Opposition and his family, and to all hon. Members and their families.

Mr Deputy Speaker, Sir, I also take this opportunity to express my best wishes to the Clerk of the National Assembly and to all the officers of Parliament.

I finally also convey my best wishes for the festive season to all our fellow citizens of the Republic of Mauritius.

I thank you, Mr Deputy Speaker, Sir.

(Applause)

The Deputy Speaker: Thank you very much.

Mr P. Armance (Third Member for GRNW & Port Louis West): Mr Deputy Speaker, Sir, let me first tender the apologies of the Leader of the Opposition who, unfortunately, is not among us for some health related issues.

Mr Deputy Speaker, Sir, 2022 has been an exceptional year for the Opposition's side. We had the responsibility to take Ministers and even the Prime Minister to task. Out of more than 1,200 PQs that have been on the Order Paper for this year, we had a tremendous performance from my colleagues on the Opposition's side.

(Interruptions)

The Deputy Speaker: Order! It is Season's Greetings. Do not...

Mr Armance: Thank you, Mr Deputy Speaker, Sir. So, we have fully participated in debates, Budget Speeches, the Committee of Supply where we have brought our variable contribution, which has just been confirmed by the hon. Acting Prime Minister, and I thank him for that.

Mr Deputy Speaker, Sir, the Leader of the Opposition had about 20 PNQs in the Chamber for this year and he has had an outstanding performance. We, on the side of the Opposition, would like to congratulate him for such an outstanding performance as well.

On behalf of the Leader of the Opposition, Members of the Opposition and in my own name, and the PMSD, I would like to associate myself with the Acting Prime Minister to present our Season's Greetings and best wishes to the President and the Vice-President of the Republic

of Mauritius, to the Leader of the House, the hon. Prime Minister, to Mr Speaker, and yourself, Mr Deputy Speaker, Sir, to all Members of this august Assembly on both sides of the House, to the Clerk, the Deputy Clerk and the staff of the National Assembly, and to all our respective families.

May 2023 bring peace, prosperity, health and happiness to each and every citizen of Mauritius. Merry Christmas and a Happy New Year 2023 to everyone. May God bless Mauritius!

Thank you.

The Deputy Speaker: Thank you very much. Hon. Members, I associate myself with the Season's Greetings expressed by the hon. Acting Prime Minister, on behalf of the Prime Minister, and hon. Armance, on behalf of the Leader of the Opposition, to His Excellency, the President and Mrs Roopun, to His Excellency, the Vice-President and Mrs Boissézon, and their families.

On behalf of Mr Speaker and in my own name, and on behalf of the Clerk and officers of the National Assembly, I thank the Acting Prime Minister and hon. Armance for the good wishes. On behalf of Mr Speaker and in my own name, I am pleased to extend my best wishes for a Merry Christmas 2022 and a Happy New Year 2023 to the hon. Prime Minister and to Mrs Jugnauth, and members of their family, to the hon. Acting Prime Minister and Mrs Obeegadoo, and members of their family, and to all hon. Members and their families.

As the Leader of the Opposition is not present, I would request hon. Armance to convey to him and his family our good wishes. May I also join the Acting Prime Minister to thank the Clerk, the Deputy Clerk, the two Clerk Assistants, all the officers of the National Assembly, including officers of the Parliamentary ICT and Broadcasting Unit, the Hansard Unit, the Library, the Office Attendants, the Serjeant-at-Arms and his officers, and the officers of the Solicitor General's Office, and all civil servants who have assisted with the work of the Assembly, and convey to them and their families my Season's Greetings.

I look forward to a fruitful, productive and blessed year ahead. I also extend our Season's Greetings to our beloved countrymen, the citizens of Mauritius.

Thank you very much.

ADJOURNMENT

The Ag. Prime Minister: Mr Deputy Speaker, Sir, I beg to move that this Assembly do now adjourn to Tuesday 28 March 2023 at 11.30 a.m.

Mr Seeruttun seconded.

Question put and agreed to.

The Deputy Speaker: The House stands adjourned. Have a safe trip back!

At 7.10 p.m., the Assembly was, on its rising, adjourned to Tuesday 28 March 2023 at 11.30 a.m.