

The Future  
of  
Electric  
Vehicles

# DRAFT

## ITEZZE Australia Submission to: AEMO Integrated Service Provider

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### Background

This is written at a time when 250,000 people are without power in Victoria and the world has been living for three (3) years after Global Oil output Peaked in 2024. Indian Farmers are marching on the capital seeking a '**Minimum Support Price**' (MSP) for produce after oil prices doubled since 2019. A road tanker containing Ammonium Nitrate overturned near Mackay. Police set up a 5 km exclusion zone and closed the North-South Railway network to protect passengers. (Ammonia is used as an alternative method to transport H<sub>2</sub> - hydrogen, which some parties promote as an alternative to the use of electricity to run vehicles). Steve Pastor (former Head of BHP Petroleum said at a CERAWEEK Conference in Texas in 2017, "We estimate that by 2025, based on about one per cent per annum global demand growth, and three to four per cent natural field declines, the world will need new oil supply of approximately 30 million barrels of oil per day."

The largest new oil discovery since has been the Guyana reserve in 2018. It is said to have 8 billion barrels of oil which at 2018 world use rates (it used 103 million barrels per day in 2019 or 37.5 billion barrels per year) will last the world for 4 months. An extra 4 months of global oil supply has little effect on any calculations.

Australia 1.1 million barrels per day (bpd) of oil; mostly imported Most of this is as diesel, petrol, and aviation fuel, along with ship fuel. Cars and Passenger vehicles in Australia use 17.5 billion liters of fuel (petrol and diesel) per year. Average consumption on an electric EV car/Ute/light commercial to replace this fuel is 17 KWH/100 kms. At existing rates of 17 kwh/100 km it will take 29.89 billion KWH per year. This does not include the fuel needed to replace oil fuels in mines, heavy road transport and agriculture.

Additional electric power needs to be generated and moved across to vehicles to replace the existing and ongoing falls in oil output. ITEZZE is the only Technology capable of replacing these energy needs. Hydrogen apart from being highly dangerous is a waste of time. Hydrogen takes 51 kwh of renewable electricity to generate one (1) kg of H<sub>2</sub> which can then power a car for 100 km (compared to 17 kwh/100 km using ITEZZE).

And hydrogen cost<sup>ii</sup> - "At the new price, filling a Toyota Mirai's 5.6kg tank would cost \$201.60 — around \$0.50 per mile (US\$), according to the Japanese auto maker's claimed driving range of 400 miles (647km). By way of comparison, fully charging a 60kWh Tesla Model 3 in California would cost US\$11.94."

(This is now recognized; the Hydrogen Fallacy is covered in Section 2.2.1 of the ITEZZE Standard Document). Overseas hydrogen networks are being shut down.

The Australian society collapses without the replacement of oil-based fuels in road transport; trains, farms, mines and earthmoving. **ITEZZE can do it**, in the available timeframes and in doing this is expected to be the largest energy provider in the country. Twice as much electricity as was generated in Australia in 2019 will be needed to power the transition from oil-based fuels to EVs. (Hydrogen would require 6 x times as much).

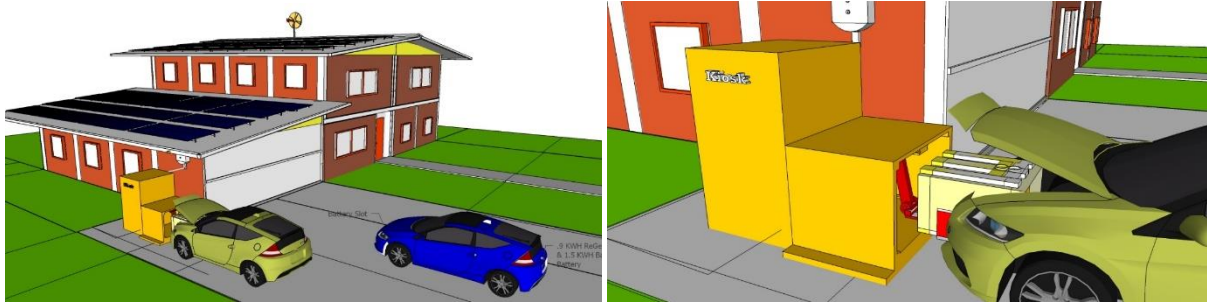
### Introduction

World oil output peaked in 2020. HSBC estimate production of 81% of reserves is in natural decline where output drops by 3-4% per annum. As oil has now Peaked so, one can expect output to drop by 2-3 million barrels per day (bpd) per annum. It is expected oil output will be down by 30 million bpd per year (from 2019 amounts) in 2030. GDP as general rule falls 2% for each 1% fall in oil availability; which is happening around the world but particularly in South American regions that don't have oil reserves. The fall in GDP is also happening in Western nations where it is disguised by inflation. If the inflation rate is 4.9% and GDP rises 2.4% then in Real Terms GDP has fallen by 2.5% as real earnings of the society have fallen.

And, effectively sounds a death knell for society if a replacement cannot be found and rolled out in time.

ITEZZE is a suitable replacement which can be rolled out in the timeframe available (10-12 years) but switching society to fully electric cars/trucks/buses and earthmoving, mining and farm machinery requires twice (2x times) the amount of electricity now used in addition to what is now used.

Only ITEZZE can make it effective by using existing and new transmission lines and enhanced rooftop solar.



**Diagram 1.** ITEZZE cars each have 2 x swap batteries. One in the kiosk getting recharged by sunlight and the other in the car running it. Each Kiosk can handle 2 x cars plus a house battery. So, it can handle 3 batteries. The kiosk can draw power from solar panels on the house roof or off grid. This means that in the event the weather is overcast it can draw power from distant sources. **The Breakthrough of the Kiosk System** is there is always a battery in the Kiosk to **receive renewable power**. Whether it is from **solar or a wind generator** on a homeowner's roof or from distant tidal, wind or solar farms; **it is always open for business to receive power**.

### The need for oil (or a replacement)

Remove oil and without an economic, viable replacement - society as we know it collapses. There is only one long term economically viable replacement that can roll out the timeframe available – it is ITEZZE.

When world oil output peaked in 2020 people started scrambling to implement a replacement fuelling system/ source; but as the scientific discussion at the end of the movie<sup>i</sup> [A Crude Awakening – the Oil Crash](#) (it is important to watch most of the movie) shows the only alternative energy source capable of replacing oil was solar. 70% of oil is used in transport, mines and farms. Society needs these and without oil; population analysis predictions indicate world population could fall from 8 billion now to 1.9 billion (at the upper end of estimates).<sup>iii</sup>

The challenge with a Population Crash is that it is not just caused by the collapse of oil output<sup>iv</sup>, but by the war, anarchy and famines cause by food production collapsing and the movement of food to markets ceasing. In the Ukraine (EU region's largest producer of grain), a consequence of the Ukraine War is that the movement of grain to markets in Africa and other areas has slowed dramatically, thus causing starvation in those areas.

### Oil Price Shocks

When it was apparent that Oil output would peak the IMF ran a series of analysis and wrote a report of the likely impact of a major change in oil availability and in particular the rate of increase in oil output slowing. A number important features of the report.

- Global Oil Output Peaked in 2020; it didn't just slow the increase year on year – output is now falling.
- IMF figures calculate a Larger Shock Scenario as a reduction in Growth of Oil Supply - NOT A REDUCTION in output as has now occurred with Peak Oil. Hence the real impacts of Peak Oil will be far severer than figures the IMF have modelled
- Saudi Arabia cut oil exports by 1 million barrels/day from 15th July 2023; and,
- Since 2012 when this report was written the largest new oil discovery found has been the Guyana reserve in 2018. It is said to have 8 billion barrels of oil which at 2018 world use rates (it used 103 million barrels per day in 2019 or 37.5 billion barrels per year) will last the world for 4 months. An extra 4 months of global oil supply has little effect on any calculations.

The world is in a serious oil crisis which without an effective replacement for oil is only going to grow worse.

## IMF Report

In 2012 after it had been recognised that new oil discoveries had begun to lag behind demand rises the IMF commissioned a report on the problem. **Note:** This was not talking about oil output falling as happened in 2020 but oil demand rising faster than production. This then caused a '**Demand Gap**' which would then grow larger. So, if oil demand was rising at 3% pa and oil supply was rising at 1% pa a gap between supply and demand would cause prices to rise. Oil demand was rising at 2% per year in 2019 the last year before Global Oil Output Peaked in 2020. The demand Gap of 1 million bpd per annum modelled in the IMF Figure has oil demand 15-20 million bpd more than output in 16-20 years. The real-life scenario now currently in play has the Demand Gap at 8-10 million bpd after 3-4 years (and rising).

## Like for Like Replacement

For society to transition people need to be able to buy cars that cost about the same amount as the former ICE (internal Combustion Engine) ones; cost about the same to run and with the same convenience. So, fuel for effectively \$1-30/liter; Drive time to Sydney from Brisbane – 10.5 hours and replacement price for new vehicles starting at around \$26,000. They also need vehicles they can get into and drive anywhere fast. Police cars need to be able to keep up with offenders and **NOT** run out of Puff. (As was happening in California with EVs).

## Critical Infrastructure

The 5 Eyes Intelligence group assessment recently advised that Chinese hackers have breached a number of critical infrastructures in the US (and Australia). This exposes them to closure/shutdown. Electricity Grids are critical infrastructure. Other work (documented in other reports) detailed how existing BEVs (built-in battery EVs) can cause residential grid overload and destroy substations (substations can explode when overloaded). Since road transport is an essential (cars/trucks get people to work and move goods) any system switching cars from oil across to electricity needs to guarantee supply; and be able to by-pass residential grids and continue to operate when Grids fail. In Victoria recent February 2024 outages had 97,000 -130,000 homes without power.

A consequence of this is that if people are using BEV vehicles, then electricity workers won't be able to get to work (potentially for weeks) to repair the wires (neither will other people). Petroleum used to be stored in the petrol tanks at a service station; if the grids were down the service stations could still pump fuel using generators which ran on the fuel in their own tanks. So, the servos were virtually self-sufficient.

Any system replacing oil-based fuels needs to be able to ensure that workers can get to work.

While it is common for residential Grids to go down it is rarer for the Regional 11kV Grids to fail. The ITEZZE System provides much more customer backup than BEV systems for the following reasons:

1. Car homeowners with **HSPV** Technology can recharge them from their own kiosk and solar panels;
2. The Home Kiosk can carry spare batteries giving the owner 2-3 days of local travel;
3. Homeowners can move across to hired batteries and drive out of the Grid affect regions and pick up batteries from the ITEZZE Swap Servos;
4. ITEZZE Servos carry both hard swap batteries and **LFB** Fuel; 60,000 to 100,000 liters of **LFB** fuel is enough to power a thousand small size vehicles for 2 days. And **LFB** Fuel can be topped up by tanker;
5. ITEZZE can truck fully charged batteries in from servos outside affected areas and swap them over at ITEZZE Servos in those areas, then take the flat batteries back to the outside servos to recharge them.

## ITEZZE Servo Systems and the Requirements of Energy Supply

In March 2019, 1½ months after the main US Patent issued, a Group of OPEC investors approached ITEZZE with a request to buy in. They had known about ITEZZE for year. The Paris (2015) Climate Agreement was based on ITS (as it was then called). Hence, they had had plenty of time to review the technology and to decide if it worked. The investors are now being offered licenses to run ITEZZE Hwy Servos. As they said, 'they know' they are running out of oil but they still have plenty of gas (that can be converted to LNG using solar to refrigerate the gas.) Thus, they have unlimited supplies of gas and an ability to transport it to virtually anywhere on earth. The gas is converted to electricity (Using dual cycle gas fired power stations) and then supplied to ITEZZE EVs. Using gas in this way will **REDUCE** CO<sub>2</sub> emissions by over 73% compared to ICE vehicle's and make Paris work.

Energy Emissions (Kg CO <sub>2</sub> per GW Energy)		CO <sub>2</sub> emitted (Kg) per Unit of Work (GWhr)	Greenhouse Gas Released Compared to Petrol Combustion Engine	Greenhouse Gas Released Compared to LPG Combustion Engine
ITS Enabled Economy				
Oil to Electricity to ITS Vehicle		2,063	63%	84%
Natural Gas to Electricity to ITS Vehicle		907	28%	37%
Coal to Electricity to ITS Vehicle		1,898	58%	77%
Renewables/Biomass		730	22%	30%
NON-ITS Enabled Economy				
Petroleum to Combustion Engine		3,250	100%	
Natural Gas to Combustion Engine		2,450		100%
Renewables/Biomass to Comb. Engine		1,150		

**Table 1. CO2 Emissions Reductions**

The methodology for this in Australia, would be to build a number of small gas-fired 60-90 megawatt power stations which could then supply service stations along on a long Highway route. The investors own the power plants. High Voltage transmission lines are built adjacent to highways to allow easy access for repairs to them. Thus, running the power down the existing transmissions lines (at a fee) means they can piggy back on existing infrastructure. They can also build wind on solar farms to feed into the swap batteries in the servos. Whilst this was simply an option prior to **COP 28**; the new agreement means they need to do it now.

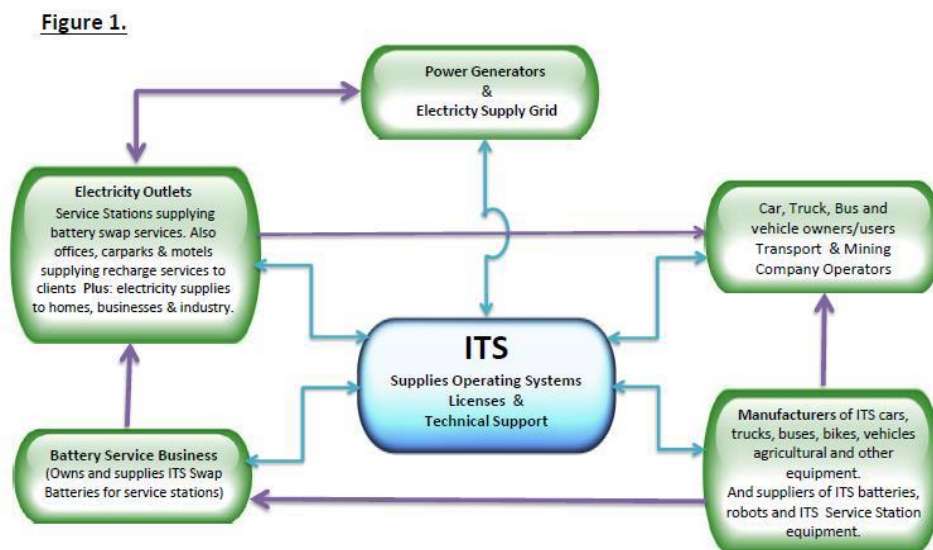
Technically, this would require them to build the gas handling and transport infrastructure in Australia; but the “Virtual Supply” concept means that they can cut a deal with someone like Shell Energy Australia who owns massive gas supplies in Australia already, to supply gas to their power plants here and in return they supply their customers with LNG gas in other parts of the world. It’s a **Win-Win** for both parties.

*Other Parts of Infrastructure*

ITEZZE as the Diagram – Figure 1 shows relies on different suppliers to own different parts of the system. Numerous operators can run the servos but all the batteries in a region are run by one BSB (Battery Service Business) owner. These batteries need to be controlled and monitored. Where they are is important. A battery may be worth \$500,000. For the Regional 11kV Grids to fail. The BSB Operator relies on getting paid on every KWH going through the battery. So, reliable communications are relied upon to ensure that servos can advise where the batteries are; who owns them; how much charge they have in them (the servo is licensed to sell surplus power into the Grid in times of supply shortages) and the customer number of who using them.

These communications need to go down secure fiber and communication lines and as required ITEZZE will need access to them.

**Figure 1. ITEZZE is a license Business - parties are licensed to run the different sections**



### *Farms and Mines*

Whereas some mine operators think they can use hydrogen instead of electricity; they can do that. It is obvious that if the hydrogen systems are at the rear of the mine truck, then if the gas explodes most of the force should be separated from the driver by the 240 tons of ore in the truck's tray. The only problem of course is if there is someone walking behind the truck. Hydrogen is almost impossible to guarantee the safety of workers around it. It is the smallest molecule on earth and as one expert said, "it can get out of any crack."

Farmers on the other hand cannot survive without ITEZZE. The operate is alone for much of the time. Work related incidents can destroy a family that runs the farm. Safety is therefore an essential.

Grain farmers use on average 70,000 liters of diesel pa (*Diesel Use in Australia*) to replace this requires large numbers of PIGs to be on hand during planting and harvest seasons. These can be trucked in by BSB Operators. The local Hwy Service Station operator will be responsible for ensure their operation. A farmer can either have a connection to the local 11KV Grid; or a PIG and LFB recharge station will be located at the end of each farm service road with access to the 11KV Grid. PIGs are robotic and can be programmed to move themselves down the service road from the main recharge station to swap sites on individual paddocks on the farm.

Farm tractors/harvesters use around the same amount of electricity as B-Double trucks.

In non-harvest/plant seasons farmers can use smaller 130 KWH PIGs that can be recharged in a **HSPV** Format.

**Mine Trucks** will use a PIG system (as shown in the Video link on Page 6 of the ITEZZE Standard Document); the large (220 ton) mine trucks use 400 KWH each 45 minutes. Excavators and other equipment used on mines will be supplied by PIGs that can travel up to 30 km too a load point beside where the excavator is working.

Power for mines can come from the Grid; an onsite gas fired generator provided by a licensed ITEZZE Provider or wind or solar farms. ITEZZE with the swap battery system makes wind and solar usable at any time. In Sth America some mines are on top of mountains and the port is at the bottom. In this instance mine and transport trucks can run almost entirely off regenerated power produced on downhill runs. PIGs are charged on downhill runs, then dropped off at intervals for empty ones. The charged ones then power the trucks back up.

### *Council Buses*

Australia is well serviced by solar and council buses operate from 4 am to 11 pm most days (and longer on weekends). The ITEZZE recharge station in bus depots will have a PIG system using **LFB** Technology. Buses could then swap over PIGs quickly during the Bus driver changeover half way through the day. Buses in Brisbane use around 130 KWH in a full shift.

### *Freight and Road Transport*

Details of the electricity usage requirements for different types of vehicles are found in the ITEZZE Service Station Numbers (attached). B-Double trucks will use the LFB Fuel technology in a dual PIG Format (so two PIGS one on top of the other behind the cab that load separately). Trucks can also carry thousands of liters of **LFB** Fuel in the old side tanks to provide a backup and when they are going for long distance off Hwy.

### *Southern States in the Winter Months -*

It wasn't only OPEC Countries that agreed to oil use reductions in COP 28 Agreement; Western Governments agreed as well. This means considerable work needs to be put in to building Grid transmission infrastructure to move power from the Northern States - Nth Queensland; Western Australia and the Northern Territory to the Southern States where it can be used in vehicles. ITEZZE means that any power which is delivered south can be used effectively. Thus, it is up to government and Grid operators to deliver it.

### *The Capricorn Effect*

Capricorn effect is caused by the earth being tilted at an angle of 23½ degrees to the sun. So, in the middle of summer, in the southern hemisphere, the sun is perpendicular to the surface of the earth at a latitude of 23½° south of the Equator (the Tropic of Capricorn). And, in the Southern winter it is perpendicular at 23½° north of the Equator. This earth's tilt means that even in summer solar panels in southern Australia (from mid-NSW down) receive far less sunlight than in the north and only operate at around 10-15% of full capacity at 9-30 am



(Eastern Standard Time). In winter the impact is more. In mid-winter the Sun is 47° further from overhead in the Southern Hemisphere than in mid-summer; the South Pole is in total darkness and Sydney at 34° south is 57½° away from directly overhead. Capricorn Effect is the reason why using solar to make H<sub>2</sub> is uneconomic.

The **Transmission Loss** from Alice Springs to Melbourne is around 30%; so, to get 52 KWH of power there to make 1 Kg of hydrogen requires 74 KWH to be sent. Trucking Hydrogen from the Northern Territory to the south is also unviable H<sub>2</sub> takes 3.8 times as many trucks as petrol. However, the second battery in the ITEZZE kiosk means it can take energy at any time and most Grids have spare capacity from 1 – 4 pm when solar power is strongest. Thus, sending 17 KWH to Melbourne to supply a large EV with 100 Km of power only requires 24 KWH to be sent; and in the middle of winter this means that cars in Melbourne and the other Southern States can still be running on solar.

### *Grid Backup and LFB Technology*

At the present analysis 7.3-9.4 liters of LFB Liquid provides 1 KWH of power. The average ITEZZE servo will have 100,000 liters available in tanks. This is mainly for truck use and cars when people are going long distance (e.g. On highways). This is there for when it is needed; but at certain times of the year people won't travel long distances a lot e.g. Winter; and grid demand could rise. (Cold weather and no solar power available from the roof). The power in the LFB Fluid would be able to be sold back into the Grid and then replaced later. Unlike petrol in fuel tanks; the LFB Fluid in this scenario goes nowhere. The servo can easily recharge it when electricity becomes available (e.g., Late at night).

### *ITEZZE is an Essential Solution for Farmers*

An understanding of the issues enables farmers to track a path through a changing world. The world has to change, oil is running out. The energy source that has powered farming and economies for the last 100 years is running out. People can't afford \$17-\$29/liter for petrol; farmers can't afford \$17/liter for diesel. So even at the lower end of the price rises, society and the economy needs to transition off oil.

The problem from a farmer perspective is that Oil doesn't just power the farm equipment; it is used outside of farms and has an impact on the farmers' market for produce. It moves the produce from the farm to the market and powers the economies that the produce is sold into. They run and work on oil and without transport, work and income people can't buy farm produce

Most people have less than \$40 to spend of discretion income. On average people use 37 liters/week; a \$1 per liter rise costs \$37/week; so, they reduce non-essentials. As the *Price point Inflation brief*<sup>v</sup> (Attached) shows, oil has been the main external driver for initial inflationary price rises. These are then followed by catch-up prices rises and interest rate rises. Interest rates rises then lead to more inflation.

The problem from a farmer perspective is that if people have no money to spend then they can't buy the produce the farmers produce. Now this seems incredible to get one's head around but let's use nuts for an example. Nut farmers plant their trees then wait years (up to a decade) for them to reach full production. They then sell their nut for \$10/kg and spend money tending their trees. They make a nice living. A recession crisis hits and people (more specifically housewives) buy less nuts. The average housewife spends \$23/child on lunches and buys nutbars to put in the kid's lunch box. Money becomes tight; they can't buy nut bars. The manufacturer has a problem. Nut bars go off. Retail studies have shown the only way to get consumers moving is to discount prices by 50%. So, the nutbar maker cuts prices which when they realize that this CosLive crisis is becoming a permanent thing becomes something they do every fortnight to survive. They may survive but turnover is down 30% for the nut grower and the nutbar buyer only wants to pay half normal price for nuts.

The farmer can't survive at those prices; so, he bulldozes the trees that have been in his fields for years.

This is rolling out across the country – farmers have higher costs and lower incomes. They **cannot afford not to have** ITEZZE systems to reduce fuel prices on their farm. And, they cannot afford to have people who normally buy nutbars so short of money that they cannot afford to buy them. So, for them, ITEZZE is an essential. They need ITEZZE to cut fuel costs for average people **so they can go back to buying nutbars** and they need ITEZZE to cut their fuel price and that of the transport operators so nutbars are cheap enough for people to buy.

## Economics and the General rollout

It is accepted in some economic circles that each 2% rise in an economy's GDP is powered by a 1% rise in oil use. Conversely, it would also then apply that a 1% drop in oil availability would cause a 2% fall in that country's GDP. This fall in oil availability may be caused by the people in a country not being able to afford to buy it and hence if they can't buy it - they haven't got it. When people travel, they either make money or spend money. No oil, or very expensive oil means they either cut back or do neither.

Oil makes up 10% of the economic input cost for most First World economies. Increase oil price by 50% (as happened in 2020/21) and it causes a 5% increase (50% of 10% = 5%) to underlying inflation of 2½%; so, 5% + 2½% = 7½%<sup>vi</sup> which is what inflation went to in Australia in 2021. (Look familiar).

In real terms this is working out in Australia but here it has been heavily disguised by inflation. GDP in Australia last year rose by 2½%, but inflation in 2022 rose by 6%; so, in real terms GDP fell by 3.5% but the people can't see it. They feel it; they know it; they believe it and they can't afford to live; but they are told its all fine.

0.1% fall in GDP/quarter for 2 quarters in a row is a recession what is 2½% drop for 2 years in a row?

This is happening (and very visible). Japan went into Recession last quarter. In Sth American countries which don't have oil reserves; things are getting worse. Oil prices are rising in response to world falls in production. Individuals in these countries can't afford the higher prices and so cut back on use. This leads to a slowing of economic activity, and falls in production and output of local goods hence their local GDP drops. In real terms incomes are dropping. They're voting with their feet; walking to Mexico as they try to go to the US to get a job.

So, for farmers there is a 2-Part problem to be addressed. If people can't afford food, they won't buy it.

**Farmers can't sell without a market;** and without a way to reduce their oil cost, farmers can't produce crops. So, the farmer is stuck in the middle – falling prices for produce.

### *Demand Destruction*

Economics like many professions, has polite euphemisms for horrible stuff. Nurses label the girl who takes out the bed pans, "the Princess of the Pans"

**Demand Destruction is an Oil Company Term for Economic Wipe-out.**

Low socio-economic nations can't afford fuel moving from \$1/liter to \$2-3/liter and so, people stop driving.

### *Australia and the ITEZZE Rollout*

Australia generally has a N+1 Grid long line transmission grid; but many residential Grids are 'Creaking'. The Author was in major regional city when the power blacked out at 6-30 am (during Peak Period of course). How reliable is that for someone trying to put a bit of charge into a battery to get to work. (And remember people sometimes don't remember to plug-in after a hard night). So, ITEZZE systems are essential. ITEZZE caters for normal people who live normal lives and make mistakes. It caters for Grids that fail and trees that blow over.

This however doesn't alleviate the responsibility of Grid Providers to ensure they work with the only EV system that works. The PHEV system that other carmakers are rolling out is a good short-medium term solution for some people. Some older people who don't drive much still haven't filled their fuel tank with petrol/diesel 6 months after they have brought their car. For low use drivers PHEV will give them 10 years. From a grid perspective however, PHEV will increase loads and unreliability. Many of these people live in older areas with old substations and petrol/diesel will hit AU\$10-00 a liter soon. Hence, PHEV is **NOT** a long-term solution. PHEV doesn't cater for trucks and buses and many existing EV Truck systems are 'useless' according to their sellers.

Customers want a truck that can do 300-500 km in a single day's work. The drive in one direction dropping off goods; hit the big city, then drive back picking up goods. EVs with a range of 220-240 km that then need to set on a recharge for 8 hours are useless. They can't sit in the city for 8 hours waiting to recharge before they go home. From a truck owner perspective, it is ridiculous. They can't pay a worker for 8 hours (overtime) just to sit there watching the truck recharge. And then, by the time its finished all the pick places have closed.

Now you can understand why the people trying to sell them call them 'useless.'



These are called 'last mile' trucks but, ITEZZE works for everything. The truck gets to the major city; swaps the battery while the driver gets his lunch. He does his pickups and then drives home

### The Rollout

ITEZZE needs to get this system moving; society is crashing around our ears. Anarchist attacks (which Government knows about) and the need to wait until everybody has worked out that the other EV technologies don't work (along with waiting for the patents to Grant) has taken many years. But those are behind us. The ITEZZE rollout will see:

By Year	Australia	Overseas
2027	100,000/year	10 million cars/trucks/year
2028	1 million cars/trucks/year	50 million cars/trucks/m bikes/year
2029	1.4 million cars/trucks/year	72million cars/trucks/m bikes/year
2030	2.3 million cars/trucks/bikes/year	130 million cars/trucks/year

To do this ITEZZE will fast-track the rollout in some major car producing countries. ITEZZE will offer a major carmaker the exclusive for passenger cars for 7 years (until 2031) for their nation (which we own the patent for). Any other carmaker will need their permission to build/sell passenger cars there. Another will have the license for trucks/ and buses on similar terms. A major oil company that we are negotiating with will have the service station rights (and as a condition will need to let our OPEC Investors have some sites as well). The organizations with the Head License will be able to charge royalties (under ITEZZE conditions) to any other suppliers wanting to sell vehicles into the market. These people have already committed to EVs –

**ITEZZE simply makes it happen for them.**

### AEMO Response

Global oil output is falling but demand Destruction and the Ukraine War are keeping oil prices relatively stable for now. The Ukraine War is keeping prices down because the US issued an order that, anyone buying oil off Russia could only pay a maximum of US\$60/barrel. This has kept prices down; they were US\$130/barrel before the War started. Demand destruction causes million to reduce driving in Third World countries – Philippines, Sth America and others. China has been rolling out vast numbers of EVs. They had the ITEZZE Briefs in 2016 and have been preparing for this since. An LNG pipeline was built to China from Russia for electricity production.

Demand Destruction is occurring in Australia but it is mainly reflected in people altering their purchase priorities – they can't stop driving so they have to reduce everything else; But the problem is oil output is still rising and fuel prices will hit \$4 to \$5/ liter soon. When this happens ITEZZE demand will go through the roof.

It is expected that by 2024/5 over 1 million people and businesses will have **registered** to buy ITEZZE vehicles.

A number of 2 - 3 million vehicles, being delivered here per year is possible especially if overseas carmakers use Australia as their 'Test Bed'. This is going to place heavy demand through/on the Grid.

A major oil company and other gas producers are already talking to us about rolling out networks. Many will want to generate power from their own gas. AEMO will need to work to facilitate transmission to their servos. A key point for AEMO which we have already made to service station operators is - why waste money on building charge stations for car companies that can't make money on EVs. Ford and GM<sup>vii</sup> are losing money on EVs watch the link<sup>viii</sup>. The ITEZZE difference is we charge servo operators US\$1+ million for a Hwy servo license, we don't ask Govt to pay us to establish them. Gross Margin on a 515 km ITEZZE Highway site doing around 750 Articulated Trucks/day (along with cars, buses, other trucks and commercials) is about \$100,000/day.

### PHEV Issues

It's anticipated ITEZZE will be the dominant force in car sales within 3 years; even so, PHEV vehicles will be sold until then and afterwards (to those whose driving habits prefer them). PHEVs create and issue for Grids:

1. Some recharge over 20 hours at 3 KW/hour; other in 8 hours at 7-8 KWH; so, they use their substation allocation plus their neighbour's.

2. A large number will want to recharge at night putting additional loads on the evening Grid;
3. A lot will plug in during the evening peak from 4 pm.

These and other current EVs will create legacy issues even after ITEZZE rolls out.

The advantages of ITEZZE in this space are:

1. A **HSPV Kiosk** 'does it during the Day' so to speak and leaves the Grids free for others at night;
2. A servo with large amounts of spare **LFB** KWH's may sell them to Grid to help overcome the 4 pm rush.

The advantages of this 'Free Battery Storage'<sup>ix</sup> which ITEZZE servos make available should not be overlooked.

#### *Priorities for AENMO*

The long-distance Hwy Networks will be important. Everybody is buying ITEZZE so they can:

1. Home charge; and,
2. Travel easily of over long distance.

This, it is a priority that long distance servos have power and work with OPEC Groups and oil companies to put servos in place to supply customers. Of particular importance is the trucks servo at each 250 or 515 km intervals. Service Station numbers and KWH requirements per vehicle. AEMO/Govt will be able to calculate KWH requirements from these. The Government Bureau of Statistics has vehicle numbers.

It is anticipated that the average high volume truck stop will handle 750 Articulated vehicles per day. They can generate a gross margin of \$100,000/day hence there will be interest in opening them. Remember, oil-based Volvo trucks didn't need to stop; they could use 2000-liter fuel tanks to by-pass servos, but ITEZZE trucks have to stop at their mandated rest stops.

The next area of concern is the long distance transmission capable of bringing power from Northern Australia to the Southern States; plus supply mines and cattle stations and farms along the way. Grain farmers use on average 70,000 liters pa but, even cattle farmers can use 70,000 liters of diesel pa. (They build road networks on their properties). So, the world is making this huge shift from diesel/petrol to electricity in a short time.

Finally, AEMO needs to work closely with ITEZZE on the development of Kiosks. Home kiosks will be designed to communicate with the Grid and take power when the Grid is free. They may also be able to feed in to the Grid as well; so discussions on how this would occur would be advantageous.

#### *In Conclusion*

Global oil output will continue to fall as reserves deplete. Any other electric vehicle system (other than PHEV Plug in Hybrid Electric Vehicles) is expected to decline in popularity. ITEZZE expects to sell 1 million vehicles in Australia by 2027 and upwards of 50 million vehicle per annum in other countries. By 2029 ITEZZE expects 130 million vehicle per annum to be delivered. It is expected that by 2030 most large truck and bus operators in Australia will have moved across to ITEZZE as oil (petrol prices) pass \$5/liter and head towards \$17/liter.

Demand destruction is where demand for oil falls as economies that use it collapse. The widescale rollout of ITEZZE will stop economic collapse. It is expected that the Large Shock Scenario defined in the IMF OIL Report will be hit much sooner than they had anticipated principally because they modeled a slowing in the Growth of Supply rather than a decline in global output as we are now experiencing. Without a rapid rollout of ITEZZE Technology output will continue to fall faster than oil use can be moved to other sources. However in 73 million ITEZZE Vehicles are sold/year the 3 million barrel per day drop in output will be replaced by electricity and oil prices should potentially stabilize at \$4 to \$7/liter. The use of ITEZZE will increase electricity demand by 150% on top of 2020 figures. New transmission lines will be essential especially to bring solar to southern states.

## References

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<sup>i</sup> ABS – Road Transport Survey 2016

<sup>ii</sup> Search for: [Is the Toyota Mirai fully hydrogen?](#) How much is a tank of hydrogen for Toyota Mirai?

<sup>iii</sup> Lower estimates see it falling to 1.6-1.7 billion or less

<sup>iv</sup> <sup>iv</sup> [BHP oil boss says future demand 'staggering' | The West Australian](#)

For the Regional 11kV Grids to fail.

<sup>v</sup> The Drivers of *Price Point, Cost Plus, Ratio Averaging* and other types of inflation

<sup>vi</sup> The Drivers of *Price Point, Cost Plus, Ratio Averaging* and other types of inflation (Rayner 2023)

<sup>vii</sup> [HUGE NEWS! Ford & GM SHOCKED As They CAN'T Sell EVs! \(youtube.com\)](#)

<sup>viii</sup> [HUGE NEWS! Ford & GM SHOCKED As They CAN'T Sell EVs! \(youtube.com\)](#)

<sup>ix</sup> AEMO is not required to pay setup of the batteries although servo operators may charge for use.