

# Kingdom Report

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## **Lev. 23:22 And 1 Million Jobs for the Poor**

Here in South Africa we have a jobless poverty crisis. 70% of our young people unemployed, 40% of our adults unemployed... Scripture and a national renewable fuels policy are the answer to 1 million new jobs for the poor.

In ancient Israel agriculture was 90% of its economic activity. In this economy God ordained that a certain portion of that economic activity must be given to the poor. Charity of handouts were mandated for widows orphans, the handicapped, because they could not work. But the poor who could work a certain small part of the economy was to be given to them exclusively to work.

Here is what two scriptures say.....

*Lev 23:22 And when ye reap the harvest of your land, thou shalt not wholly reap the corners of thy field, neither shalt thou gather the gleaning of thy harvest: thou shalt leave them for the poor, and for the sojourner: I am Jehovah your God.*

*Lev 19:9 And when ye reap the harvest of your land, thou shalt not wholly reap the corners of thy field, neither shalt thou gather the gleaning of thy harvest.*

*Lev 19:10 And thou shalt not glean thy vineyard, neither shalt thou gather the fallen fruit of thy vineyard; thou shalt leave them for the poor and for the sojourner: I am Jehovah your God.*

Here is my policy proposal for the Christian community to promote as part of our economic program for Southern Africa.

Forget about the fantasy of an electric vehicle future for Southern Africa's car transport future. Or even trying to manufacture and export such vehicles. We have no hope in competing with China or supplying electricity to run EV's.

We need instead to implement a national renewable fuels manufacturing policy much like Brazil and most other nations and thereby use renewable biomass to convert to ethanol and blend with our national fuel supply. This can create over 1 million new jobs for the poor!

This would literally be a direct fulfillment of Leviticus 19 and 22 whereby a portion of the national agriculture output is allowed by the poor to be harvested and convert into fuel. Here I am not referring to the poor harvesting maize or wheat. I am referring here to the fact that you can make with modern enzyme technology ethanol from any grass biomass.

All plants collect CO<sub>2</sub> from the air and water (H<sub>2</sub>O) from the ground and combine them to make glucose sugar molecules (C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>) which they then assemble into

strings of cellulose (a 6 carbon carbohydrate) and hemi-cellulose ( a 5 carbon carbohydrate). All organic chemicals use these three elements carbon, hydrogen and oxygen as building blocks for chemical products.

Sasol uses these three in coal to break them up and rearrange them into fuels and chemicals. Instead of using dirty coal and spewing pollutants in the air we can use abundant plant biomass to make renewable fuels and chemicals.

How do the poor figure in this? Well there is an abundant amount of biomass every where in the land that the poor can gather and bring in to collection points and be paid for every tonne of grass or crop residue after the maize or wheat harvest has left a lot in the fields.

To give you an idea: One metric tonne of grass can be converted into 200 liters of ethanol. Young people who are poor and low skilled could be growing special fast growing grasses on the more than 2 million hectares of government land. You can grow 10 mt of grass on a hectare of ground.

South Africa uses about 10 billion liters of petrol and 10 billion liters of diesel per year. You can adapt a diesel engine to run on pure ethanol and we could easily add 15% ethanol to our national fuel supply.

This is what many nations are doing already. And I want especially to highlight Brazil and their policy of mandating production of cars with ‘Flex-Fuel’ engines. Those are engines that can run on either petrol or petrol mixed with high percentage of ethanol.

Here are what other nations are mandating for ethanol inclusion in their petrol supply:

1. Brazil: Has the highest ethanol blending mandate in the world, up to 27.5% by volume. Brazil offers lower taxation on ethanol and allows its use in carbon reduction credits.
2. United States: Has a Renewable Fuel Standard (RFS) program that sets annual volume requirements for renewable fuels, including ethanol. Most gasoline in the U.S. contains up to 10% ethanol.
3. India: Has an E20 (20% ethanol blend) target by 2025. As of 2023, India reached an average 12% ethanol blend nationwide.
4. European Union: Aims to have 10% of transport fuel come from renewable sources like biofuels by 2020 in every EU country.
5. China: Announced legislation in 2017 proposing the use of 10% ethanol blending nationwide.
6. Paraguay: Has a 25% ethanol blending mandate.
7. Argentina: Has a 12% ethanol blending requirement.
8. Colombia: Has a 12% ethanol blending mandate.
9. Costa Rica: Established mandatory use of around 7.5% ethanol blend for all gasoline sold in the country.
10. Canada: Has biofuel mandates that vary by province, with some provinces requiring 5-10% ethanol blends.

Why not South Africa? Here is a great example from Brazil. They do use sugar mostly for ethanol manufacture but many nations are now using the new enzymes that

can turn cellulose and hemi-cellulose in grass biomass into glucose and pentose sugars for fermentation into ethanol.

Brazil has a well-established biofuels industry, with a strong focus on ethanol and biodiesel production. Here are some key points about Brazil's biofuels industry, particularly in relation to flex fuel engines:

### **Brazil's policy for "flex Fuel Vehicles"....**

Brazil has the largest fleet of flexible-fuel vehicles (FFVs) in the world. Some key points about flex fuel vehicles in Brazil:

- Introduced in 2003, flex fuel vehicles can run on any blend of gasoline and ethanol, from pure gasoline to 100% ethanol (E100).
- As of March 2018, there were 30.5 million flex fuel cars and light trucks registered in Brazil.
- Flex fuel vehicles represented 88.6% of all light-duty vehicle registrations in 2017.
- Over 80 flex car and light truck models were available in the market as of 2012, manufactured by 14 major carmakers.

Brazil's success with flex fuel vehicles and ethanol blends has made it a model for other countries looking to develop their biofuels industries. The country continues to invest in research and development to improve biofuel technologies and expand their use in the transportation sector.

Brazil supports the use of flex-fuel vehicles (FFVs) through several key policies and initiatives:

1. Ethanol blending mandates: Brazil has implemented mandatory ethanol blending in gasoline, currently at 27% ethanol (E27). This policy supports the use of ethanol fuel in FFVs.
2. Tax incentives: The government provides tax incentives for FFVs and biofuels. Recently, a federal tax exemption for fuels including biodiesel and ethanol was extended.
3. Research and development support: The government has supported the development of flex-fuel technology since the late 1990s, leading to the introduction of commercial FFVs in 2003.
4. National programs: Brazil has implemented programs like the National Alcohol Program (ProAlcool) and more recently, the "Mover" program, which promote biofuels and sustainable mobility.
5. Long-term policy commitment: The government has maintained support for alcohol/ethanol use in vehicles even during periods of low oil prices, which has paid off in recent years.
6. Infrastructure development: Brazil has invested in ethanol production and distribution infrastructure to support the widespread use of FFVs.
7. New initiatives: The government is developing a Future Fuel Program to further increase ethanol and biodiesel blending.
8. International cooperation: Brazil is participating in global initiatives like the G20's Global Biofuel Alliance to boost supply and demand for biofuels.

9. Sustainability targets: The New Industry Brazil policy, launched in 2024, aims to increase the share of biofuels by 50% in the transport energy mix by 2033.

These policies have resulted in FFVs dominating the Brazilian automotive market, with flex-fuel vehicles accounting for 88.6% of all light-duty vehicle registrations in 2017. The government's consistent support has made Brazil a global leader in biofuel production and use, particularly in the automotive sector.

In Sweden the Scania company has specialized in the manufacture of large trucks and buses with engines that run on ethanol instead of diesel. Scania has been a pioneer in developing and commercializing ethanol-powered buses and trucks. Here are the key points about Scania's efforts with ethanol vehicles:

1. Long history: Scania has been producing ethanol-powered vehicles for heavy transport for over 30 years, with the technology in commercial operation since 1986.
2. Engine technology: Scania developed ethanol engines using compression-ignited technology similar to diesel engines, rather than spark ignition. This provides better efficiency and performance for heavy-duty applications.
3. Bus applications:
  - In 2007, Scania unveiled an ethanol-powered hybrid bus that reduced fuel consumption by 25% and carbon emissions by up to 90%.
  - Scania has supplied ethanol buses to Stockholm since the mid-1980s, with over 400 ethanol buses operating at peak.
  - The company offers ethanol bus engines with 280 hp output.
4. Truck applications:
  - Scania produces ethanol truck engines with 280 hp and 410 hp options.
  - In 2018, transport operator Citram Aquitaine began testing a Scania Interlink LD Euro 6 bus running on bioethanol made from winery waste.
5. Fuel technology: Scania's ethanol vehicles use ED95 fuel, which is 95% hydrous ethanol blended with 5% ignition improver.
6. Environmental benefits: Compared to diesel, Scania's ethanol engines can reduce carbon emissions by 85%, nitrogen oxides by 50%, and particulates by 70%.
7. Ongoing development: Scania recently launched its fifth generation of ethanol-powered engines, demonstrating continued investment in the technology.
8. Global adoption: While initially developed for Brazil, Scania's ethanol vehicles have been adopted in various countries, including Sweden, Finland, France, and Norway.

Scania's long-term commitment to ethanol as an alternative fuel for heavy vehicles has resulted in a mature technology that offers significant environmental benefits while maintaining performance comparable to diesel engines.

## **Kingdom Vision Policy Proposal: The Carbohydrate Economy**

Here at Kingdom Vision we as a Kingdom Policy initiative want to promote a real renewable energy policy based on an entire switch from a “Hydrocarbon Based Economy” that uses oil and coal as feedstock to a Carbohydrate Based Economy that uses biomass as a feedstock for producing the nation’s fuel and chemicals.

Within this policy switch we see the use of masses of the poor in the land given the job opportunities to collect as well as grow the millions of tonnes of biomass for this national program. In addition we also see women and other poor being trained in the basic industrial process of how to turn biomass grass into glucose and pentose sugars.

These sugar syrups local production units in turn transport these syrups to regional bio-refineries for fermentation into fuels and chemicals.

The process of using a specialized yeast to ferment sugar into ethanol gives off both ethanol and CO<sub>2</sub>. The CO<sub>2</sub> goes back into the atmosphere where it can once gain be captured by plants who then convert that CO<sub>2</sub> into glucose. This is nature’s natural pollution free endless cycle of how to make true renewable fuels that can be repeated for thousands of year...of which oil and coal cannot!

This process is labour intensive and allows for full participation of both those who haven’t no technical or education skills to have employment and income but also allows others with technical training to participate in a growing rural industrial economy.

We further propose that like Brazil South Africa start a nation goal towards all cars being made with Flex-fuel engines and trucks and tractors with flex fuel engines that can run on either diesel or ethanol.

This technology can be imported from Brazil and Sweden and all engines can be made here in South Africa giving a huge boost to local car manufacturing and allowing for major export opportunities into the rest of Africa where a switch to biofuels would be a natural policy move for most African countries.

I will be developing more information and technology on the whole Carbohydrate Economy and the technical basis for Bio-Refineries in future blogs. In my coming new website in the new year I will have a distinct section on Kingdom Policy Initiatives for a new Southern African economy where this concept will be expanded on.

In the meantime, forget about an EV future for Southern Africa. That is a fantasy which even America is finding out is not working. Let’s work on Africa solutions for African problems using Africa resources of labour, land and appropriate technology.