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Standing Senate Committee on Energy, Environment
and Natural Resources

Towards A Sustainable Energy Strategy

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Good morning.

I'm Peter Boag, President of the Canadian Petroleum Products Institute (CPPI). With me today is Mr. Gilles Morel, CPPI's Director of Fuels.

Thank you for the opportunity to appear here today; to participate in this critically important discussion. I hope my remarks will be helpful in your thoughtful examination of Canada's energy future.

CPPI represents the downstream sector of the oil industry. We are the refiners and distributors of, among other products, gasoline, diesel, and aviation fuel. We produce and market the transportation fuels that, in a very real way, keep Canada moving.

Our members include: Chevron Canada, Husky Energy, Imperial Oil Products and Chemicals Division, North Atlantic Refining, NOVA Chemicals (Canada), Parkland Income Fund, Shell Canada Products, Suncor Energy Products, and Ultramar. These companies operate 15 refineries that supply some 12,000 retail sites through a network of 21 primary fuel distribution terminals, and 50 regional terminals.

If I could leave you with one overriding message today, it would be this:

We can achieve a more sustainable energy future for Canada. Indeed, our members are committed to this goal, and are working hard and investing significant amounts to achieve this vision. But wishful thinking will not get us there. We must proceed with knowledge, reason, science and fact.

There is absolutely no question that alternative fuels can and will play an increasingly important role in meeting the needs of Canadians. Given the growing demand for energy, we will need all the energy resources we can muster.

In fact, it may surprise you to learn that our members, the conventional fuel producers, are among the leaders in the global drive to develop and deliver alternative energy sources.

Some of our members are the largest producers of conventional ethanol in Canada. Others are working to develop advanced biofuels using feedstocks such as straw and bio-mass. Still others are exploring the production of liquid transportation fuels using algae.

They are at the leading edge of ongoing effort to find new clean, sustainable fuels that can power our cars, trucks, railways, ships and aircraft into the future.

The refiners and marketers of conventional transportation fuels know that it will require a great deal of money and time to develop commercially viable alternatives – fuels that can compete with conventional fuels on cost, reliability, safety and performance.

And there are a number of emerging technologies that someday may deliver on the promise of a secure supply of affordable, efficient, environmentally-friendly new fuel.

But we are not there yet, so in the meantime, our members will continue to invest in their traditional product lines as well. Canada's refiners will work to ensure that the needs of their customers are met, and that gasoline and diesel are continuously improved.

We believe that a parallel track of pursuing new fuel alternatives AND maintaining and improving existing supply – is a wise course. It is the energy strategy we recommend to this committee.

We need to ask ourselves some hard questions in formulating a plan for a sustainable energy future.

When it comes to transportation fuels, what can we realistically achieve?

How long will it take?

What kind of investment are we looking at?

And along the way, how do we continue to meet the transportation needs of this country?

How do we ensure that goods continue to be shipped efficiently, our trade with the U.S. and other countries is not disrupted, food arrives in the grocery stores, airlines meet their schedules, and people get to work?

The bottom line - how do we fuel a cleaner, more sustainable transportation system AND maintain continued reliability of fuel supply, at an affordable cost?

At CPPI, we are becoming increasingly concerned that some policy-makers believe there is an 'easy fix' ... that we can get 'off oil' by simply mandating alternative fuels ... that all we need to do is put in place regulations that 'make it so'.

We're here today to tell you that if such a magical solution were available, it is very likely that our members would already have brought it to market. And while they have made great strides in new innovations and technologies, they can only push to the limits of what chemistry, engineering and financial capacity can deliver.

An example of wishful thinking exceeding the reach of the achievable is the push to mandate a national standard of 2-per-cent biodiesel in an unrealistic timeframe. A timeframe that is too short to address significant technical feasibility issues. A draft regulation establishing the start date and duration of the first compliance period has not yet been published, but public expressions of intent indicate to us that we could be faced with an unworkable start date that could put the country's fuel and transportation systems at risk.

The technical feasibility issues stem principally from the fact that, unlike ethanol that is a simple chemical and has been in use for decades, biodiesel thickens in colder temperatures, and its flow properties become degraded. This creates the need for significant new blending infrastructure to ensure consumers get a consistent, high quality fuel that is fit for use. It requires the development and promulgation of appropriated standards that define critical fuel properties in a variety of on and off road applications. And it requires an adequate supply of biodiesel suitable for use in Canadian conditions and a different diesel blendstock to compensate for the degraded cold flow properties of biodiesel. It is important to understand that mixing just 2 to 5 percent biodiesel requires major changes to the other 95 to 98 per cent.

We have consistently advised that three years from date of final regulation is typically required to complete the investments necessary for this kind of project. Work completed under the government-led National Renewable Diesel Demonstration Initiative confirms this.

Requiring refiners and marketers of diesel to proceed too hastily with a renewable diesel mandate could increase reliance on foreign sources of renewable diesel, increase the risk of supply disruptions, and increase the costs of compliance to the sector.

I don't want to dwell on this issue, but it serves as a timely illustration of the dangers of implementing policy without due regard for implementation practicalities and unintended consequences. Government has to get it right. Policy decisions are not made in a vacuum – they have a very real impact on real people in the real world.

Fifty-five per cent of all gasoline and diesel produced in Canada is now used in business activities – our jobs, standard of living, and competitive position in the world depend on these fuels.

And that's why CPPI is concerned about the myths and misinformation that are increasingly accepted by some as fact. A growing voice that gasoline and diesel are past their useful life, that they can be replaced by alternative energy sources virtually overnight, and that the new fuels are more environmentally friendly, cheaper, and offer the same energy equivalent.

Let's step back and consider each of these assumptions.

Gasoline and diesel have served us well for over a century. Their reliability, affordability, safety and convenience have allowed us to build a great country, enjoy an enviable standard of living, and remain competitive in international trade. Today, Canadians consume some 75 billion litres of gasoline, diesel and aviation kerosene a year.

Are these conventional fuels past their useful life? Hardly. Today, gasoline and diesel continue to meet most of our on and off-road transportation fuel requirements. Currently, less than 2 per cent of passenger vehicles are fueled by alternative sources of energy, such as electricity, natural gas, propane and renewable fuels.

According to the International Energy Agency (IEA), biofuels provided less than 2 per cent of the world's transportation fuel in 2008. And even 40 years from now, the IEA predicts that biofuels may account for only

25-30 per cent of the world's road transportation fuel mix. Hydrocarbons will still be needed to meet most of the world's transportation fuel demand.

Why have gasoline and diesel dominated? Put another way, why haven't other energy sources replaced them as the primary transportation fuels?

It comes down to chemistry. Gasoline and diesel are 'energy dense'. That is, they store large amounts of energy in a relatively small space and are therefore ideally suited for mobile use. By comparison, ethanol, the most widely used alternative fuel today, contains only 2/3 of the energy content of gasoline. Gasoline and diesel are reliable, safe and convenient – and they deliver on a demanding set of expectations related to both engine and environmental performance. On a cost-equivalent basis, no other alternative can even come close to providing the transportation energy we need – at least not today, and likely not for the foreseeable future. In fact, much of the effort underway today to develop new fuels from various feedstocks is aimed at ensuring they can emulate the performance characteristics of gasoline and diesel.

Do gasoline and diesel pollute? When we use them in our cars and trucks, tailpipe emissions result. But Canadian refiners have spent billions of dollars and made great progress in cleaning up these fuels. Lead has been eliminated. Sulphur levels have been reduced by over 90 per cent. Benzene has been cut by more than half.

Through a combination of fuel improvement and new vehicle technology, we've made impressive environmental gains. According to the Canadian Vehicle Manufacturers' Association, you'd have to drive a 2005 or newer sport utility vehicle, fueled by today's low sulphur gasoline, around the world 37 times to equal the emissions caused by burning one cord of wood in your fireplace.

The processes that by which these fuels are produced have also been substantially improved. For example, from 1993 to 2008, atmospheric emissions of nine of the 10 most commonly emitted substances declined by amounts ranging from 61 per cent to 89 per cent. This was achieved at the same time that product output from refineries grew by 20 per cent. Since 1996 refinery CO₂ emissions have been reduced by nearly 10%.

Can we switch to alternative energy sources easily and quickly? Even if a reliable and affordable substitute were available – which is currently not the case – we would have to spend billions upon billions in rebuilding

and retooling the complex production and distribution infrastructure that ensures Canadians have access to the right fuel, at the right time, at the right place. Such massive investment would take years, even decades, to complete.

And we mustn't overlook that, with only minor exceptions, our fuel and vehicle standards are harmonized with those of the United States. Canadians reap significant economic benefit from this integrated market which facilitates trade and provides economies of scale. We could pay a heavy price if Canada's fuel mix and standards were to diverge too far from those in the US.

And what about claims that the alternative fuels are more environmentally friendly than gasoline and diesel? We need to be careful about generalizations, and we need to compare environment impacts of various fuels over their full life cycle from production right through to consumption - what we call a well to wheels comparison.

A recent study highlights this issue.

The Institute for European Environmental Policy (IEEP) reported last month that if EU countries proceed with planned increases in conventional biofuel use, between 27 and 56 million tonnes of carbon dioxide will be added to the environment over the next 10 years as a result of additional lands being cropped to meet the feedstock requirements.

This would be equivalent to putting 12 to 26 million additional cars on Europe's roads. According to the report, promoting the use of biofuels with no consideration of indirect land use change has the potential to increase greenhouse gas emissions beyond those that would arise from continued fossil fuel use. Admittedly, there is still a lot of uncertainty around the issue land use change in life cycle analysis – this is a good example of the need to get the science right before we make major decisions.

Yes, next generation biofuels made from non-food crops and waste biomass, and even algae, offer significant promise for reduced GHG emissions, but commercial viability on a large scale is more than a decade away, perhaps longer.

And let's not ignore the costs. The federal government's own cost benefit analysis for its recently implemented 5% ethanol mandate, determined that this single regulation could result in motorists paying an additional \$3 billion in fuel costs to drive their cars over the next 25 years.

What about electricity and electric cars? They are only as green as the source they plug into, and in North America, hydrocarbons are used to generate much of the electricity. The environmental impacts have only been moved out of sight – from the highways to the power generation plants.

The promise of an electric car – one that is cost competitive, meets the performance expectations of Canadian motorists, and reduces the environmental impact of driving – is still years away. The technical and economic barriers are significant. Even automotive industry leaders acknowledge that only a tiny fraction of drivers will switch to battery powered vehicles in the next decade.

A recent J.D. Power and Associates report further highlights this. J.D. Power forecasts that combined global sales of hybrid electric vehicles (HEVs) and battery electric vehicles (BEVs) are expected to total just 7.3 percent of the 70.9 million passenger vehicles forecast to be sold worldwide by that year.

Let me be clear, I am not here today to champion gasoline and diesel to the exclusion of all other transportation fuels. As I said at the start, alternative fuels can and will play an increasingly important role in meeting the needs of Canadians in the years to come. But we need to ensure that the pace of change is realistic and that we reach for what is achievable. Wishful thinking will not get us there. We must let fact, science and reason steer our decision-making.

It will take time, money, and innovation before we have alternatives that can achieve large scale commercial viability – that can deliver the same benefits as conventional fuels at a comparable cost. There are no shortcuts –you can't order up new technologies and infrastructure and expect them to be delivered according to an impossible timetable. A case in point is the 1990's regulatory experiment by legislators in California to force zero emission vehicles (ZEVs) onto the market which, in the end, was an exercise in wishful policymaking

So when it comes to moving our planes, trains, automobiles, trucks and ships, gasoline and diesel will continue to do the heavy lifting for the foreseeable future.

And we shouldn't overlook the contribution that smarter, more efficient use of existing conventional fuels can make to a sustainable energy future for Canadians. Using less fuel is by far the most cost-effective way of reducing vehicle emissions of air contaminants and GHGs. Save fuel. Save money. Reduce environmental impacts.

Thank you, I look forward to your questions.