

**Chemtrade Logistics-ERCO Worldwide-Univar Solutions-GFL Environmental
North Shore Community Advisory Panel (CAP)
MEETING SUMMARY NOTES
ERC Worldwide, 100 Forester Avenue, North Vancouver**

**Dinner 5:30pm / Meeting 6:00 pm to 8:00 pm
Thursday, February 23, 2023**

Attendance

Brian Scott, ERCO Worldwide
Steve Spence, GFL Environmental
Owen Horn, Chemtrade Logistics

Meraz Sekhon, Univar Solutions
John Hawkes, NSEM
Babs Perowne, NV Can

John Miller, Lower Capilano Residents
Association
Alex Adams, Blueridge Community
Association
Stuart Meyer, Miles Industries
Suzanne MacLeod, Kenneth Gordon
Maplewood School
Kaila Sept, Kenneth Gordon
Maplewood School
Dave Mair, Resident
Barbara Rennie, Blueridge Community
Association
Yan Liang, GFL Environmental
Colin Armstrong, HTEC
Sabina Russell, HTEC
Melissa McKinnon, HTEC

Regrets

Robin Lee, Univar Solutions
Nini Samra, Tsleil-Waututh Nation
Andrew Van Eden, Tsleil-Waututh
Nation

Lianne Payne, Wild Bird Trust
DNV Planning Department
Stuart Porter-Hogan, Maplewood
Community Association (MACA)

1. Welcome and Introductions

Members introduced themselves and welcomed new attendees.

2. Review of November CAP meeting minutes

Members reviewed the November CAP meeting minutes. No edits to the original draft sent out after the meeting were noted. The facilitator will finalize the November meeting minutes and send them to DNV to post on their CAP information webpage.

3. HTEC Presentation on North Vancouver Liquefaction Project

The presentation was delivered by Colin Armstrong, President and CEO, Sabina Russell, VP Clean Fuels and Melissa McKinnon, Director, Liquefaction Assets.

HTEC was founded in North Vancouver in 2004 and opened its first facility in 2005 at Newalta (now GFL Environmental). It is focused on making zero-emission travel and transport possible. HTEC's biggest accomplishment has been developing Canada's first network of hydrogen fueling stations, enabling commercial hydrogen electric vehicles to come to Canada. HTEC has safely delivered almost 100,000 kg of hydrogen over the last 10 years without a safety incident.

Hydrogen is a clean carrier of energy without carbon emission at point of use, it is efficient and renewable. It is a massive global industry and one of the top 10 commodities in the world. Hydrogen is one of the most abundant elements in the universe and is versatile, able to be made and used in several ways. It is the most energy dense fuel from a weight perspective and is the answer to replacing heavy duty diesel fuel from trucking.

Canada has committed to net zero emissions by 2050. There is currently 672 megatonnes of carbon dioxide equivalent emissions per year in Canada, 24% from transportation. The goal is that by 2050, one third of energy is delivered by hydrogen.

A fuel cell car has a tank of hydrogen which stores energy. Within the fuel cell oxygen and hydrogen react to create electricity, heat and water. This is a zero-emission vehicle. If you use hydrogen in a fuel cell, it has 2.5 times more efficiency.

How large is the battery?

It is a fifth the size of a regular battery, around 2-3 kilowatts.

What is the range of a fuel cell electric car?

A Hyundai has 650 km range, a Mirai, 500 km. It is around 100 km per kg. The benefits are a longer range and faster fill.

Can you get two motors or just one?

One.

Does the fuel cell performance go down in cold weather?

On a minor scale compared to electric cars.

For larger volumes, will the costs decrease?

With the support of the Provincial government, the cost of hydrogen at HTEC's current refueling stations is below the cost of gasoline.

Hydrogen benefits:

It doesn't produce the same carbon emissions that cause global warming. It doesn't negatively affect our air quality. It's safer than liquid fuels in a fire because of its dispersive nature.

There are 56,000 fuel cell cars globally driving around. The 66 hydrogen busses are not Translink, almost all of them are in California. However, Translink is again starting to look into using hydrogen.

The proposed project is to co-locate a facility at ERCO Worldwide in North Vancouver to take the waste hydrogen produced from ERCO's sodium chlorate process and make it into clean transportation fuel. HTEC will capture, purify and process this industrial hydrogen to produce 15 tonnes per day of clean liquid hydrogen to supply HTEC's network of hydrogen fueling stations across BC and sell to other users. This will be the first hydrogen liquefier facility in Western Canada. The plan is for the facility to be operational in early 2026.

HTEC and ERCO have signed a purchase agreement for HTEC to be able to secure the space for the facility and to be able to work together.

HTEC is currently in the due diligence phase of the project, having completed the preliminary permitting application at the end of last year through DNV. There is a bylaw prohibiting the production of hazardous materials which requires site specific exemption. HTEC has been doing public consultation through broad outreach, including meeting with the mayor, DNV, the Tsleil-Waututh Nation, etc.

The benefits of the project are as follows:

-The 15 tonnes of waste hydrogen currently being produced by ERCO each day will supply hydrogen fuel for more than 30,000 hydrogen electric vehicles which will help the province meet its CleanBC GHG emission reduction targets.

-The project will retain and create 100 jobs in BC.

Will there be enough consumption in the area or it will have to be shipped out?

“Offtake” with liquid can extend the distance to over 1000 km. HTEC will look as far afield as makes sense.

Can you expand later if you start production at 100%?

We are looking to expand throughout the province. HTEC will be adding additional hydrogen production facilities throughout BC.

Would it be an option to use hydrogen produced by Chemtrade as well?

It’s possible. Owen Horn said that they currently have an agreement with Linde but this is not for liquid hydrogen.

The impact of the proposed facility on residents will be minimal to none in terms of traffic and noise.

In terms of the potential risks, there are currently 14 hydrogen liquefaction plants in North America producing 300 tonnes of liquid hydrogen per day. HTEC has done a quantitative risk analysis and doesn’t expect the risk to extend beyond the perimeter of the site, so there will be no risk to the Maplewood community.

How would the product be transported?

Liquid hydrogen would be transported by trucks.

Are you developing your own liquefaction technology?

HTEC has an investor, Chart Industries, that has its own liquefier.

Is hydrogen a generic product or are there limitations on the filling stations one can use?

You can go to anywhere there is a hydrogen station (there are 5 right now); there are strict protocols to follow.

Will you target industrial use?

We are hoping to get the CP train from Vancouver to Calgary involved.

What is the capacity?

30,000 cars, 600 buses and 400-500 heavy duty trucks.

Will the hydrogen produced qualify as blue hydrogen?

No, it will be green hydrogen as it’s made from electrolysis. The type of hydrogen is

determined by what you make it from. Grey hydrogen is from natural gas and blue hydrogen is also from natural gas but the carbon dioxide is sequester.

How available are the cars that would use hydrogen?

Toyota has a few dealers in town with relatively short delivery times. The goal is to have these ready by the fall. The price would be similar to an electric vehicle.

Is training for first responders available?

The company reaches out to the municipality concerned to ensure first responders receive necessary training.

Is there a difference between the hydrogen produced at Chemtrade?

The by-product hydrogen produced at Chemtrade is similar to that produced at ERCO. Both would require some purification prior to liquefaction.

Will the HTEC facility change the BC Hydro profile at ERCO?

No, HTEC will have its own sub-station and BC Hydro has capacity for both.

4. Update on Recently Submitted Development Applications

The DNV Planning Department was unable to send a representative to the meeting. CAP members can view significant development applications being considered on the [DNV website](#).

5. NSEM Update

John Hawkes reported that after having conversations with the fire departments, a priority that NSEM has identified is to bring the Hazmat and emergency operations teams together with industry partners. He will be reaching out to industry partners about this and will report back on the findings to CAP members.

NSEM has hired a Planning and Resilience Manager, who will start after Spring Break. This person will be responsible for updating emergency plans.

NSEM participated in an exercise on coastal response for 2023. This was a provincially led regional earthquake exercise that involved all municipalities, the federal government and industries. Good questions came out of this exercise around the shoreline industries, notifications, roles and responsibilities.

6. Reports from the Companies

a) Chemtrade Logistics

Owen Horn reported that under safety, an employee had a strained elbow in January, which was treated with a topical cream. Chemtrade had one safety reportable for the year and met its annual goal. Chemtrade is implementing a new safety philosophy based on Human Organization Performance principles. The plant's annual safety plan has been developed with input from employees and JHSEC.

A security incident occurred when a trespasser was found walking his dog on the property and was escorted out.

Under process safety, an operator accidentally added some acid to a sodium bisulphite tank which resulted in over 5kg of SO₂ being released. There was no offsite impact from this release. Chemtrade received the Platinum award from the Chlorine Institute for 6 years without a process related incident.

In terms of environmental incidents, there was a tank overfill which sent seawater to ground. There was no offsite impact. 100% of sludge is now being removed from the site and going to an offsite landfill, such as the one in Abbotsford. It is a landfill designated for industrial waste. The sludge is a benign substance – calcium magnesium carbonate.

There were no new transportation issues.

The plant recorded a daily average production record in 2022, missing the record total annual production by 2%. A very good year ahead is forecast. In April, there will be a "mini outage" to do some maintenance which will require limited numbers of contractors. There are ongoing challenges with retirements and challenges to recruit and retain employees due to the cost of living. The land sale previously mentioned has been retracted due to the current market conditions.

In response to a CAP member's question, Owen said Chemtrade had not had many rail issues, although they were experiencing a challenge in doing maintenance on their chlorine fleet. He said he expects Transport Canada to take action after the recent rail derailment incident in Ohio.

b) ERCO Worldwide

Brian Scott reported that ERCO employees and contractors continue to work safely. As of February 23, 2023, NV employees have worked 930 days since the last Recordable safety incident (July 7/20) and 4401 days since the last Lost Time Accident (Jan. 05/11).

ERCO NV continues to ensure WorkSafe BC communicable disease guidelines are followed by all employees, contractors, and visitors. The plant has two staff members currently self-isolating due to COVID-19.

ERCO's 2022 companywide annual Safety and Environmental performance has been the best results on record for the following metrics:

- Total recordable injury rate was 0.39, lower than the target of less than 0.40.
- Safety near miss ratio was 19 to 1, higher than the target of 15 to 1.
- Environmental reportable releases was 1, lower than the target of less than 4.

The fourth quarter outfall summary was sent to the BC MOE as per PE-395 requirements. All parameters were within permit limits. From January 23 to 27, a Line 7 revalidation process hazard analysis was performed.

On February 13, a small release from primary containment occurred while filling the Seaspan barge with 50% sodium chlorate solution. The small spill was contained on the barge deck and recovered with no impact to the environment. The transportation emergency response plan was not required. The Barge Deck was cleaned by Seaspan employees. The material was returned to ERCO North Van for Disposal.

ERCO NV plant has run well since the last CAP meeting with 2 one-day outages to complete acid washes on Line 8 on February 1 and Line 7 on February 15.

c) Univar Solutions

Meraz Sekhon reported that there have been 650 days since the last personal safety recordable, and 4436 days since the last DAWC (as of end of day February 23, 2023). On January 3, 2023, NVDC celebrated a safety milestone of 12 years without a Lost Time Injury (LTI).

There have been no reportable EHS incidents since the previous CAP meeting.

There has been 1 significant near miss and 1 incident.

- Near miss - During rail switching there was miscommunication between the operators and a rail car was moved on a track where operators were working. Gaps were found in training and procedures.
- Loss of Primary Containment & Equipment Damage – During rail switching, there was unintended contact between two railcars resulting in minor equipment damage to one of the offloading arms, and less than 2L being released into secondary containment (but outside of the Primary Containment of the railcar). Gaps were found with both tools and procedures.

- The pusher operator could not hear the radio properly at a critical time. The radio was not the regular one since the normal pusher was in the shop for repairs
 - It was found that procedures could be made clearer to ensure no railcars are moved on a track while arms are connected
- Procedures have been reviewed and updated
 - New lockable blue flags were researched and ordered and improvements made to the site's blue flag system
 - Additional training (3rd party) being implemented within the next few months

There have been no environmental or security incidents.

In February, a Rail Security Audit was conducted. Zero deficiencies were found. Transport Canada is looking at ways to better combine on site audits for marine and rail.

Overall, the site is running steadily. Between November and January, CN had major delivery service issues but have slowly seemed to recover. Weather had a major impact.

The site continues to look at climate change in terms of changes to its operations, maintenance and corporate sustainability goals.

Meraz Sekhon, the site's Marine Technical Specialist with EHS responsibilities, attended the port of Vancouver's Environmental session in early February. The focus was on sustainability and environmental protection.

d) GFL Environmental

Steve Spence reported that the refinery is currently running at 100% capacity with the improvement of railcar logistics and products moving on schedule. The semi-annual shutdown is being planned for 2 weeks in May.

The Facility continues to operate within permitted approvals and has operated lost time injury free since the last CAP report.

The following first aid incidents occurred:

- A contractor injured his finger while drilling tin for an insulation job – the drill slipped and cut his finger. He received first aid and returned to work.
- A Yard Operator sprained his ankle due to hoses left on the ground inside a shipping container. The Operator returned to work after receiving first aid.

A Motor Vehicle incident occurred when a third-party trucking company was backing a trailer into the yard to off-load empty drums. As they were backing in, the tandem tires from the end of the trailer became disconnected from the axle hub. GFL staff secured the back of the trailer while repairs were made.

On February 14, a Transport Canada inspection was conducted, focusing on the Transportation of Dangerous Goods by Rail Security Regulation. No areas of non-compliance were noted. GFL followed up with administrative changes to its Railway Security Plan which have been accepted by Transport Canada.

New Standard Operating Procedures) have been written/updated as follows:

- Working alone – use of the ‘CheckMate Safe Alone’ app
- Lockout/Tagout – procedures updated

A CAP member asked all companies how they respond if there is an incident involving one of their products off site.

ERCO responded that there are in-house tech advisors as well as outside consultants that respond. If the incident is close by, they will send an expert to the site.

Chemtrade responded that there is a Chlor representative based out of the North Vancouver facility funded by Chemtrade who would deal with a chlorine railcar release; Hazco would deal with others.

In Univar’s case, the necessary documentation for the Emergency Response Assistance Plans is with the drivers. They would call the emergency numbers provided and get advice on next steps.

7. Community Update

Suzanne MacLeod and Kaila Sept from KGMS shared information about the school’s upcoming gala on Saturday, April 29 aimed at raising \$200,000 for supporting the non-profit’s work with K-12 students with learning disabilities.

Various opportunities for sponsorship are available. Kaila can be reached at gala@kgms.ca for more information.

8. Meeting Evaluation

Members in attendance gave the meeting a thumbs up.

9. Meeting Close

The meeting ended at 8:00pm.

The next meeting will be held on Tuesday, April 18, 2023 at ERCO Worldwide with a tour offered beforehand. At this meeting, Chemtrade will be presenting on the plant's risk mitigation strategies. In the June meeting, ERCO Worldwide, Univar Solutions and GFL Environmental will be presenting on their facility's risk mitigation strategies.



Community Advisory Panel (CAP) February 23rd Briefing Notes

Responsible Care – Safety, Security, Transportation, & Environmental

Safety

- We had an employee get a topical cream for a strained elbow in January.
- We are rolling out a new safety philosophy based on Human Organization Performance principles.
- Plant annual safety plan has been developed with worker and JHSEC input.

Security

- A trespasser was found on the property and was escorted out.

Process Safety

- An operator accidentally added some acid to a sodium bisulphite tank which resulted in > 5kg of SO₂ being released. There was no offsite impact from this release.
- We received the Platinum award from the Chlorine Institute for 6 years without a process related incident.

Environmental

- We had a tank overflow and send seawater to ground. No offsite impact.
- We have transitioned to 100% of sludge being removed from site and hope to not use the permitted landfill again.

Transportation

- No new transportation issues.

Plant Operations

- We missed the record total annual production by 2% but recorded a daily average production record in 2022.
- January started out strong and we are forecasting a very good year.
- We have a “mini outage” in April to do some maintenance but will require limited numbers of contractors.
- Ongoing challenges with retirements and also the local cost of living making recruiting difficult and also making it hard to retain workers.



ERCO Worldwide

ERCO Worldwide Update - (since last CAP meeting on November 22, 2022)

Safety

- ERCO employees and contractors continue to work safely. As of February 23rd, 2023, NV employees have worked 930 days since last Recordable safety incident (July 7/20) & 4401 days since our last Lost Time Accident (Jan. 05/11).
- ERCO NV continues to ensure WorkSafe BC communicable disease guidelines are followed by all employees, contractors, and visitors. We have 2 staff members currently self-isolating due to Covid-19.
- ERCO's 2022 companywide annual Safety and Environmental performance has been the best results on record for the metrics listed in the table below.

	Target	2022 Year-End Results	Historic Records
Total Recordable Injury Rate	<0.40	0.39 (2 recordable injuries)	✓ Best result on record
Safety Near Miss Ratio	15 to 1	19 to 1	✓ Best result on record
Env. Reportable Releases	<4	1	✓ Best result on record

Environmental

- The fourth quarter outfall summary was sent to the BC MOE as per PE-395 requirements. All parameters were within permit limits.
- A Line 7 revalidation PHA (process hazard analysis) was performed Jan 23rd – Jan 27th.
- A small release from primary containment occurred while filling the Seaspan barge on February 13th with 50% sodium chlorate solution. The small spill was contained on the barge deck and recovered. No impact to the environment. The (TERP) transportation emergency response plan was not required. The Barge Deck was cleaned by Seaspan employees. The material was returned to ERCO North Van for Disposal.

Operations

- ERCO NV plant has run well since we last met on November 22nd.

- The plant took (2) one day outages to complete acid washes on Line 8 Feb 1st and L-7 on Feb 15th.

Brian Scott, P.Eng.

Plant Manager, North Vancouver

Univar Solutions report – February 23, 2023

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There have been no reportable EHS incidents since the previous CAP meeting.

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 - The pusher operator could not hear the radio properly at a critical time. The radio was not the regular one since the normal pusher was in the shop for repairs
 - It was found that procedures could be made clearer to ensure no railcars are moved on a track while arms are connected
- It was found procedures could be written more specifically to ensure operators understand their roles, responsibilities and what is clearly not allowed
- New lockable blue flags were researched and ordered and improvements made to the site's blue flag system
- Additional training (3rd party) being implemented within the next few months

There have been no environmental, or security incidents.

Rail Security Audit - February

- Zero deficiencies found

- Transport Canada looking at ways to better combine on site audits for marine & rail

Overall, the site is running steady.

CN had major delivery service issues between November and January but have slowly seemed to recover. Weather had a major impact.

Site continues to look at climate change in terms of changes to its operations, maintenance & corporate sustainability goals.

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Current Status /Schedule

- Refinery running at 100% capacity
 - Railcar logistics have improved, products moving on-schedule
- Semi-annual shutdown being planned for 2 weeks in May

Health, Safety and Environment

- Facility continues to operate within permitted approvals
- Facility has operated lost time injury free since the last CAP report
- First aid incidents:
 - Contractor injured finger – was drilling tin for an insulation job when the drill slipped and cut his finger. Contractor received first aid and returned to work.
 - Yard Operator sprained ankle – Hoses left on the ground inside a shipping container led to the incident, poor housekeeping. Operator returned to work after receiving first aid.
- Motor Vehicle incident:
 - Third party trucking company was backing a trailer into our yard to off-load empty drums. As they were backing in, the tandem tires from the end of trailer became disconnected from the axle hub. GFL staff secured the back of the trailer while repairs were made.



○

Training and Audits

- Transport Canada inspection – February 14
 - Inspection focused on the Transportation of Dangerous Goods by Rail Security Regulation
 - No areas of non-compliance were noted during the inspection
 - GFL followed up with administrative changes to our Railway Security Plan which have been accepted by Transport Canada
- New SOP's (Standard Operating Procedures) written/updated for:
 - Working alone – we use the 'CheckMate Safe Alone' app
 - Lockout/Tagout – procedures updated