ARIANNE PHOSPHATE ANNOUNCES POSITIVE RESULTS FROM ITS PURIFIED PHOSPHORIC ACID PREFEASIBILITY STUDY

DAN: TSX-V (Canada)
JE9N: FSE (Germany)
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-favourable internal economics surrounding a downstream facility with a pre-tax NPV (8) of US$4.5B, IRR of 32% and payback of 3 years

SAGUENAY, QC, June 27, 2024 /CNW/ – **Arianne Phosphate (the "Company" or "Arianne")** (TSXV: DAN) (OTC: DRRSF) (FRANKFURT: JE9N) **,** a development-stage phosphate mining company, advancing the Lac à Paul project in Quebec's Saguenay-Lac-Saint-Jean region, today is pleased to announce results from its prefeasibility study ("PFS"). As per the Company's Press Release of January 30, 2024, Arianne commissioned a PFS to consider the viability of constructing a purified phosphoric acid ("PPA") plant in the Saguenay region of Quebec to transform igneous-based phosphate concentrate into a battery-grade phosphoric acid for use in the lithium-iron-phosphate ("LFP") battery.

As studied, the downstream facility would be capable of producing 350,000 tonnes (100% P_2O_5 basis) annually of PPA, making the plant the largest producer outside of China. At 350,000 tonnes, Arianne's supply could address roughly 350 GWh of yearly Western gigafactory demand. Industry analysts such as CRU, Benchmark and McKinsey, see a significant shortage of PPA by the end of the decade as traditional demand from food additives and surging demand from the LFP battery greatly increase the needs for PPA, well beyond current supply availability.

In addition, Arianne's facility would produce 220,000 tonnes (100% P_2O_5 basis) annually of a secondary phosphoric acid used in the production of specialty fertilizers and animal feeds. The market for this product will also be facing severe restrictions as current producers of this product are limiting their output due to operating constraints.

"Opportunities like this don't come along often," said Brian Ostroff, President of Arianne Phosphate. "Access to a high-quality phosphate concentrate, the ability to economically produce PPA for use in specialty applications and the advent and growth of the LFP battery provide extremely compelling economics with a pre-tax NPV of over US$4.5 billion. Further, the study also demonstrates the opportunity for our Lac à Paul mine to have a local customer. In looking at the two projects in their entirety, the Arianne companies would provide enormous benefit to its stakeholders and unlock significant value for its shareholders."

Economics

Capex

The full downstream operation is projected to have an initial Capex of roughly US$1.65 billion, which includes a contingency of approximately US$240 million. The Capex covers logistics for a phosphate concentrate transportation system on the south shore of the Saguenay River, an on-site sulphur plant for the production of sulphuric acid and, both a merchant grade acid ("MGA") and purified phosphoric acid plant.

Opex

The primary determinant in the operating costs for the PPA facility is the input cost of the phosphate concentrate (79%), the cost of sulphur used in the production of sulphuric acid (14%) and other miscellaneous operational costs such as maintenance, staffing and consumables (7%).

For the purposes of the economic model, internally built based on the Company's PFS, Arianne used an input cost of $213/t for the phosphate concentrate which is consistent with the Company's previously published bankable feasibility study ("BFS") for its Lac à Paul project. As per the BFS (October 24, 2013), at a sale price of $213/t, the Lac à Paul mine had a NPV (8) of roughly US $1.9B. Using $213/t, the cash operating cost for the PPA facility would be $1,195/t. According to Benchmark Mineral Intelligence (Phosphoric Acid Market Outlook, Q1 2024), any production under $1,450/t would be regarded as a low-cost producer of PPA.

As well, the 220,000 tonnes of secondary acid would be a byproduct of the PPA production process and thus, would not have an additional production cost associated with it. Revenue derived from the sale of this acid would be a direct credit adding to the PPA facility's bottom-line profitability.

Table 1: Sensitivity analysis related to phosphate concentrate (~40% P_2O_5) input cost (pre-tax basis)

$US (at 1:1.35)	**-30 %**	**-20 %**	**-10 %**	**Base Case**	**+10 %**	**+20 %**	**+30 %**
	$149.10/t	$170.40/t	$191.70/t	**$213.00/t**	$234.3/t	$255.6/t	$276.9/t
NPV (8) M's	$5,440	$5,130	$4,819	**$4,508**	$4,198	$3,887	$3,577
IRR	37.1 %	35.7 %	34.2 %	**32.8 %**	31.3 %	29.8 %	28.3 %
Payback (yrs.)	2.69	2.79	2.91	**3.03**	3.17	3.32	3.50
Opex (cash cost) M's	$906	$1,002	$1,098	**$1,195**	$1,291	$1,387	$1,483
Gross annual Profit M's	$751	$717	$683	**$650**	$616	$582	$549

Revenue

The PPA facility would generate revenue through the sale of its finished products. These products include 350,000 tonnes of PPA at $2,300/t, 220,000 tonnes of secondary acid at

$1,200/t and 3 million tonnes of gypsum at $10/t, a product produced through the conversion of phosphate concentrate into phosphoric acid. These prices are based on reported sales prices from several data providers and publicly available sources. The sales prices of the two classes of phosphoric acid represent a discounted 3-year average. The project would also generate surplus electricity that could be sold into the grid however, this has not been accounted for in the Company's internal revenue model.

Prices sensitivity	**-30 %**	**-20 %**	**-10 %**	**Base Case**	**+10 %**	**+20 %**	**+30 %**
Purified Phosphoric Acid	$1,610	$1,840	$2,070	**$2,300**	$2,530	$2,760	$2,990
Merchant Grade Acid	$840	$960	$1,080	**$1,200**	$1,320	$1,440	$1,560
Gypsum	$7	$8	$9	**$10**	$11	$12	$13
NPV (8) – pre-tax basis	$1,487	$2,494	$3,501	**$4,508**	$5,515	$6,523	$7,530

Environmental Factors

According to the study, the downstream PPA facility would be able to take advantage of numerous operational benefits designed to mitigate its environmental impact. By having access to a high-quality, low-contaminant phosphate concentrate, the facility would require less input material thus requiring less transport and handling of the feedstock versus other facilities. As well, by using an igneous-based phosphate concentrate, the facility's output of PPA would be at a much higher ratio than most other operations allowing for a smaller operational footprint for its production size and superior economics.

The facility would also consist of a sulphuric acid production plant. The study shows that by choosing to construct its own plant to produce sulphuric acid, the operation would substantially reduce the environmental risk associated with transporting material in acid form and, greatly reduce the needs from a transportation infrastructure by moving three times less the material.

Further, by producing sulphuric acid through the direct input of sulphur, the facility would be able to be a net producer of electricity through the capture of steam through turbines that will generate electricity. This power would allow the facility to run without the requirement of external energy sources and allow the facility to sell its excess electricity into the electrical grid for the benefit of the regional community.

Lastly, a byproduct in the production of phosphoric acid is gypsum. As most phosphate concentrates contain radioactive contaminants, the gypsum produced is a hazardous material that needs to be stored, creating a legacy environmental issue and operating expense. As per the PFS, in the case of the Arianne facility, the use of a high-purity, low-contaminant phosphate concentrate would allow the production of a marketable gypsum, generating revenue for the operation where many other operations incur a legacy cost. Further, the environmental footprint and impact would be greatly reduced as the gypsum would not have to be stacked and maintained on the property.

Operational and Economic Benefits

In addition to the significant environmental benefits that would be provided by Arianne's downstream facility, the study highlights operational and economic benefits as well. By using high-purity igneous phosphate concentrate, the downstream product mix will be targeted towards specialty markets projected to be in significant shortages in coming years allowing less competition and higher margins. The production of additional marketable products such as gypsum and electricity, would also allow for revenue streams beyond traditional phosphate-based products. Input of higher purity concentrate also allows for greatly improved operating margins as lower input volumes [and costs] will generate higher revenues.

Geographically, the project has numerous advantages. By situating the downstream project in Saguenay, Quebec, the facility will have easy availability of high-quality igneous phosphate with access to the necessary infrastructure required to build and operate a project of this size and scope. In place there is a preexisting port, rail and a road network to provide for easy transportation logistics allowing access to the emerging Western battery ecosystem in Quebec, Ontario and, the American auto manufacturing markets in Michigan and the southeast United States. The Saguenay region also provides the availability of a highly skilled workforce and has shown strong social acceptability for large scale industrial projects.

"A lot of factors have come together that allow for this opportunity," said Raphael Gaudreault, COO of Arianne. "As this study clearly shows, the opportunity is here for the Saguenay to become a major player in the essential phosphoric acid industry. The project checks so many boxes; security of supply, easy logistical access to a critical mineral, minimal operational challenge and very impressive economics, all within the context of a high ESG standard. As a mining professional of over 20 years, I can say that it is extremely rare to have everything come together in such a coherent fashion."

Geopolitical

Phosphate has been known primarily as an agricultural commodity necessary to enhance crop yields and provide the food we need. Many jurisdictions, including North & South America, Western Europe and parts of Asia run deficits and require imports to meet this growing demand. These deficits have been offset through imports from jurisdictions that historically have suffered from periods of unrest or jurisdictions that have competed with the West to secure natural resources. Today, although most phosphate is still used for fertilizer (~85%), the advent of new advanced technologies, such as the LFP battery, have placed an additional demand on phosphate.

Understanding the necessity of phosphate in both food production and technologies required for the transition away from fossil fuels, several jurisdictions have placed phosphate on their critical mineral lists. Most recently Canada has joined two of its Provinces, Quebec and

Ontario along with the European Union in adding phosphate to its Critical Mineral List. The addition recognizes the importance of the mineral as well as the very challenging “security of supply” issue.

The Lithium-Iron-Phosphate Battery (“LFP”)

The LFP battery was originally developed in the mid-1990s and today is one of the more prominent battery chemistries. Last year, the LFP accounted for roughly 35% of all batteries and, as more Western car companies (Tesla, Volkswagen, GM, Ford) have announced that they will be adopting the technology, the LFP battery is projected to be the most widely used chemistry. Superior characteristics such as safety, lifespan, charging efficiency and cost have all driven the demand for these batteries and made access to the LFP a growing priority.

As well, beyond the EV, the LFP’s attributes have made it the premiere battery for use in Energy Storage Systems (“ESS”). Analysts such as Wood Mackenzie see the growth in the ESS market accelerating demand for LFPs and believe that over 30% of all LFPs will be used in the market segment by 2030.

A significant challenge for the West is Chinese dominance in LFP battery production. Today, China produces over 95% of all LFPs with two companies alone (BYD & CATL) representing 70% of the entire market. Growing tensions between China and the West have led to a policy shift, with many of these governments now having adopted programs to accelerate the manufacturing of these advanced technologies in the West. Beyond Western manufacturing, many of these government programs also incentivize the sourcing of key critical minerals from Western jurisdictions.

The LFP battery requires PPA, a product that China also dominates. Growing demand for the LFP, along with current uses for PPA, have industry analysts predicting a significant deficit by the end of the decade. Benchmark Mineral Intelligence forecasts a deficit reaching 1 million tonnes annually by 2030, thus requiring a significant buildout of supply and, in particular, if the West is to become self-sufficient, this supply will need to be built in the West.

Arianne’s Opportunity

Situated in Quebec, Canada

- the PPA plant would be a safe, reliable Western source of battery-grade acid
- the facility is geographically close to its end markets (Western gigafactories)
- the Company would be able to benefit from attractive economic incentives provided for critical mineral projects

Facility will have access to high-quality [igneous] phosphate concentrate in the region (possibly including Arianne’s Lac à Paul project)

- Allows for a favorable phosphate product mix targeting high margin products
- Allows for easy access to necessary inputs for the facility
- Allows for additional revenue sources beyond phosphate-based products

Strong [Base Case] Economics (Pre-tax)

- Low Opex cash cost
- NPV (8) of US $4.5B
- IRR of 32.8%
- Payback of roughly 3 years

In closing, Mr. Ostroff added, “the publishing of this study should be very helpful as we look to conclude on our discussions with potential partners and financiers. Between the strong operational benefits, the strong economics and the acknowledgement of phosphate’s importance by its addition to both the Federal and Provincial critical mineral lists along with the governments’ willingness to help, there is no reason why Arianne can’t be the premiere operation in the West and, arguably the world.”

Source Information
Capex/Opex estimate:
PPA-MGA Plant by Bantrel
SAP by Atkins Realis
Logistics and integration by CIMA+

Macro:
CRU, Benchmark Mineral Intelligence, Wood Mackenzie, McKinsey & Company

Economics/Pricing:
Israel Chemical (2023 Annual Report)
Benchmark Mineral Intelligence (Phosphoric Acid Market Outlook Q1 2024)
CRU (weekly phosphate product pricing)
Statista (Average Price of Crude Gypsum 2010-2023)

About Arianne Phosphate:

Arianne Phosphate (“Arianne Phosphate Inc.”) (www.arianne-inc.com) is developing the Lac à Paul phosphate deposits located approximately 200 km north of the Saguenay/Lac St. Jean area of Quebec, Canada. These deposits will produce a high-quality igneous apatite concentrate grading 39% P_2O_5 with little or no contaminants (Feasibility Study released in 2013). The Company has 202,890,210 shares outstanding.

Qualified Person

Raphael Gaudreault, eng., Qualified Person by NI 43-101, has approved this release. Mr.

Gaudreault is also the Company's Chief Operating Officer.

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Cautionary Statements Regarding Forward Looking Information

This news release contains "forward-looking statements" and "forward-looking information" within the meaning of applicable securities regulations in Canada and the United States (collectively, "forward-looking information"). Forward-looking information includes, but is not limited to, anticipated quality and production of the apatite concentrate at the Lac à Paul project. Often, but not always, forward-looking information can be identified by the use of words such as "plans", "expects, "is expected", "budget", "scheduled", "estimates", forecasts", "intends", "anticipates", or "believes", or the negatives thereof or variations of such words and phrases or statements that certain actions, events or results "may", "could", "would", "might", or "will" be taken, occur or be achieved. Forward-looking information is subject to be known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of the Company to be materially different from those expressed or implied by such forward-looking information, including but not limited to: volatile stock price; risks related to changes in commodity prices; sources and cost of power facilities; the estimation of initial and sustaining capital requirements; the estimation of labour and operating costs; the general global markets and economic conditions; the risk associated with exploration, development and operations of mineral deposits; the estimation of mineral reserves and resources; the risks associated with uninsurable risks arising during the course of exploration, development and production; risks associated with currency fluctuations; environmental risks; competition faced in securing experienced personnel; access to adequate infrastructure to support mining, processing, development and exploration activities; the risks associated with changes in the mining regulatory regime governing the Company; completion of the environmental assessment process; risks related to regulatory and permitting

delays; risks related to potential conflicts of interest; the reliance on key personnel; financing, capitalization and liquidity risks including the risk that the financing necessary to fund continued exploration and development activities at Lac à Paul project may not be available on satisfactory terms, or at all; the risk of potential dilution through the issue of common shares; the risk of litigation. Forward-looking information is based on assumptions management believes to be reasonable at the time such statements are made, including but not limited to, continued exploration activities, no material adverse change in commodity prices, exploration and development plans proceeding in accordance with plans and such plans achieving their stated expected outcomes, receipt of required regulatory approval, and such other assumptions and factors as set out herein. Although the Company has attempted to identify important factors that could cause actual results to differ materially from those contained in the forward-looking information, there may be other factors that cause results not to be as anticipated, estimated or intended. There can be no assurance that such forward-looking information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such forward-looking information. Accordingly, readers should not place undue reliance on forward-looking information. Forward-looking information is made as of the date of this press release, and the Company does not undertake to update such forward-looking information except in accordance with applicable securities laws.

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