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GreenPrint Assessment™ (“GPA™”)

FOR

Innovative Hydrogen Solutions Inc.

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INTRODUCTION

One of the next decade's critical pressure points will be the tension between rapidly rising resource consumption and resulting costs, and environmental sustainability. Today, companies can no longer rely on business-as-usual scenarios when it comes to using resources; they must factor in higher base-level prices and increased volatility. With this growing demand and constrained supply, the costs associated with transportation and power supply are increasing, as is the pressure from consumers and legislators for commitments to the environment. For many, this threat has focused organizations to seek proven solutions to decrease operating costs and allow for a strategy of differentiation to meet the demands of their customers.

The search is on for technologies and products that can provide a solution to these organizations. For those in the transportation and stationary power sectors, hydrogen has been seen as an alternative fuel that would bring about relief. Today, [Innovative Hydrogen Solutions, Inc.](#), ("[IHS](#)"), through its [i-phi™](#) technology, has delivered such a solution that will offer both economic returns through improved fuel efficiency, and the ability to reduce harmful emissions to support environmental sustainability initiatives. Beyond the formerly noted financial opportunity, the reduction in harmful emissions can be quantified, thus allowing for active participation in carbon market(s) which can then deliver both financial and marketing returns. As a means of understanding the scope of the opportunity in the market, the logistics and supply chain sector accounts for 5% of the world's greenhouse gas, ("GHG") emissions; in Canada, that number is even greater at 17%. Therefore, the demand opportunity is terrific and IHS has the opportunity to exploit that market based upon its proven success and ability to meet internationally recognized Standards.

Beyond the traditional sales model of delivering operational benefits through improved performance, carbon market(s) act as incentives for change, providing standards and methodologies that allow for monetization of efforts, clarity in purpose and cause, transparency in action, and substantiation for marketing purposes. For [Jomini Environmental Inc.](#), ("[Jomini](#)"), the focus is on the rules of the market, and identifying the best ways for business partners to mitigate the risks of their impact on the environment, and to be rewarded for their actions that differentiates them from their competitors.

The effort executed by [Jomini](#) was focused on the financial and marketing benefits that are/would be available to IHS based on the *i-phi™* Hydrogen Generation Module technology. The effort required a review of a series of public documents, including the interpretation of over 70 methodologies and protocols, numerous trading regimes, and applicable government rulings, in order to properly quantify the effort that IHS has exercised in the development of the technology. This market review included the regulated markets in Alberta and British Columbia, where specific rules and actions are accounted for, and trading takes place in that jurisdiction for activities undertaken in that jurisdiction only. Elsewhere, voluntary markets were considered, by methodology of what trading scheme would accept a particular activity for the trading of credits. The process that allows for the quantification, and leads to the verification of the reduction for trading varies, and each was assessed for the best opportunity for IHS.

The ability to quantify reductions within these parameters allows IHS to publicize its actions through a determined and robust process, and can allow for the generation of financial returns from the carbon markets. It also provides the solid foundation of 'who says so...' when it comes to the marketing of these efforts to meet shareholder, employee and consumer demands. The stringent demands of the carbon market in Canada include necessary legal and third party interaction so that 'credits' are real, and can be seen with confidence in the markets and financial reporting. With the recent moves of the [Securities Exchange Commission](#) ("[SEC](#)"), the fact that companies are directed to include environmental quantification(s) in MD&A statements, the new rules from the [Environmental Protection Agency](#) ("[EPA](#)") in the U.S. that will be 'harmonized' in Canada, and other forces requiring responses from business on their actions, use of the market accepted methodologies and protocols provide the best protection against claims of '*greenwashing*'.

To assist IHS in seizing the initiative, this effort will develop programmes and initiatives that can be shared with customers and their clients alike, in order to deliver a game-changing solution that meets the various demands in the markets in which IHS serves.

With regard to specific findings, the main areas of study have been reviewed making use of the most relevant methodology, for the best market trading scheme, to provide IHS with a monetary return. It became apparent that the best plan forward is to work within the guidelines of the [Clean Development Mechanism](#) ("[CDM](#)"), as this provides the scope for efforts in the developing world. However, the [Verified Carbon Standard](#), ("[VCS](#)") makes use of the same methodologies and considerations, and is applicable to the deployments within North America. With one market to focus on, IHS has the opportunity to quantify to one measure and determine its best options in the markets. Therefore to develop a sales strategy that assesses the options for fleet sales, or Original Equipment Manufacturer ("[OEM](#)") partnering, IHS has the tools to evaluate the returns and develop the message that brings about commercial and environmental success.

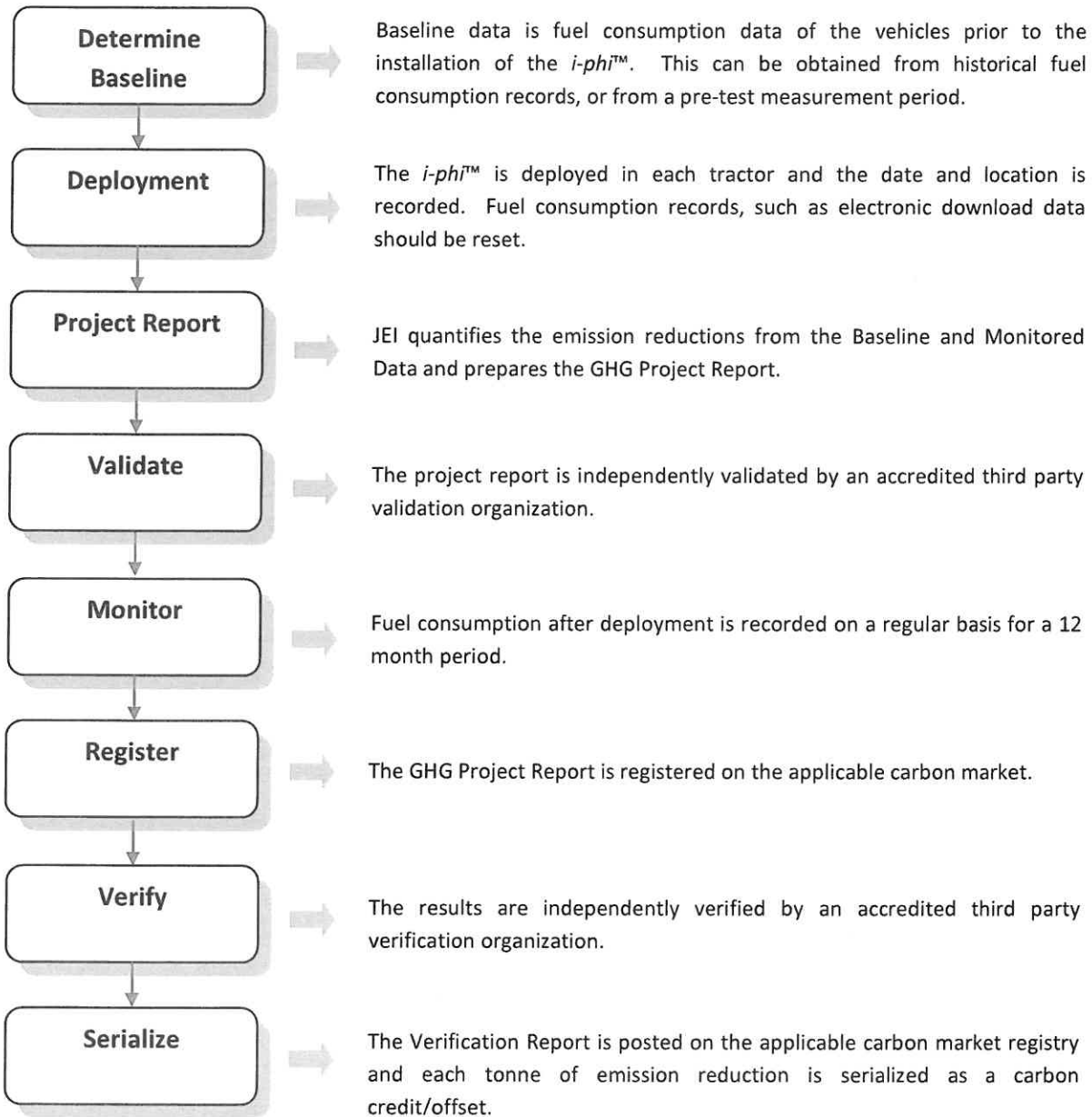
It is apparent that IHS has committed to deliver a product to the market that demonstrates significant benefits to the environment, and that it also commits to its partners, associates, shareholders and consumers. In this value chain, all participants are interested and concerned over environmental impacts of business. For the business operators themselves, each has accepted a responsibility to these stakeholders, and together they can address the reduction of GHG emissions. This opportunity exists for IHS, to be in a position to exploit this technology in this market, and to use the financial and marketing tools available to ensure a sustainable business with the environment as a core consideration. To fully engage that market, [Jomini](#) has recommended a number of actions to meet the recognized standards to quantify the reductions, and share in the returns for those efforts. Using the tools herein, IHS will be able to measure the best path forward in each of the areas of its focus, with an understanding of the feasibility of each undertaking, and the expected results.

ANNEX I – EMISSION REDUCTION PROJECT CYCLE

Introduction

Greenhouse Gas (“GHG”) emission reductions can be generated, and captured, from the deployment of the *i-phi*™ Hydrogen Generating Module in vehicle fleets. The emission reductions must be independently verified from real fuel consumption data, and the resulting carbon offsets/credits can be registered and serialized on the applicable carbon market registry.

The Process



ANNEX H - *i-phi*TM EMISSION REDUCTION BUSINESS CASE

Business Case Proxies

Annual Truck Mileage	120,000	miles
Base Fuel Consumption	5.0	mpg
Annual Fuel Consumed	24,000	gallons
Annual Fuel Consumed	90,685	litres

Mode	Emission Reduction kg CO ₂ e/L	Emission Reduction t CO ₂ e/L	Annual Emission Reductions t CO ₂ e per Vehicle					
			Fuel Savings Achieved					
			5%	10%	15%	20%	25%	30%
Road Transport								
Gasoline Vehicles								
Light-duty Gasoline Vehicles (LDGVs)								
Tier 1*	2.3411	0.00234	10.6	21.2	31.8	42.5	53.1	63.7
Tier 0	2.5003	0.00250	11.3	22.7	34.0	45.3	56.7	68.0
Oxidation Catalyst	2.3619	0.00236	10.7	21.4	32.1	42.8	53.5	64.3
Non-catalytic Controlled	2.3073	0.00231	10.5	20.9	31.4	41.8	52.3	62.8
Light-duty Gasoline Trucks (LDGTs)								
Tier 1*	2.3692	0.00237	10.7	21.5	32.2	43.0	53.7	64.5
Tier 0	2.4980	0.00250	11.3	22.7	34.0	45.3	56.6	68.0
Oxidation Catalyst	2.3600	0.00236	10.7	21.4	32.1	42.8	53.5	64.2
Non-catalytic Controlled	2.3094	0.00231	10.5	20.9	31.4	41.9	52.4	62.8
Heavy-duty Gasoline Vehicles (HDGVs)								
Three-way Catalyst	2.3524	0.00235	10.7	21.3	32.0	42.7	53.3	64.0
Non-catalytic Controlled	2.3097	0.00231	10.5	20.9	31.4	41.9	52.4	62.8
Uncontrolled	2.3253	0.00233	10.5	21.1	31.6	42.2	52.7	63.3
Motorcycles								
Non-catalytic Controlled	2.3324	0.00233	10.6	21.2	31.7	42.3	52.9	63.5
Uncontrolled	2.3522	0.00235	10.7	21.3	32.0	42.7	53.3	64.0
Diesel Vehicles								
Light-duty Diesel Vehicles (LDDVs)								
Advance Control*	2.7323	0.00273	12.4	24.8	37.2	49.6	61.9	74.3
Moderate Control	2.7295	0.00273	12.4	24.8	37.1	49.5	61.9	74.3
Uncontrolled	2.7147	0.00271	12.3	24.6	36.9	49.2	61.5	73.9
Light-duty Diesel Trucks (LDDTs)								
Advance Control*	2.7326	0.00273	12.4	24.8	37.2	49.6	62.0	74.3
Moderate Control	2.7295	0.00273	12.4	24.8	37.1	49.5	61.9	74.3
Uncontrolled	2.7144	0.00271	12.3	24.6	36.9	49.2	61.5	73.8
Heavy-duty Diesel Vehicles (HDDVs)								
Advance Control	2.6909	0.00269	12.2	24.4	36.6	48.8	61.0	73.2
Moderate Control	2.6914	0.00269	12.2	24.4	36.6	48.8	61.0	73.2
Uncontrolled	2.6894	0.00269	12.2	24.4	36.6	48.8	61.0	73.2
Natural Gas Vehicles	0.0021	0.00000	0.0	0.0	0.0	0.0	0.0	0.1
Propane Vehicles	1.5321	0.00153	6.9	13.9	20.8	27.8	34.7	41.7
Off-road								
Off-road Gasoline	2.3612	0.00236	10.7	21.4	32.1	42.8	53.5	64.2
Off-road Diesel	3.0072	0.00301	13.6	27.3	40.9	54.5	68.2	81.8
Railways								
Diesel Train	3.0072	0.00301	13.6	27.3	40.9	54.5	68.2	81.8
Marine								
Gasoline Boats	2.3368	0.00234	10.6	21.2	31.8	42.4	53.0	63.6
Diesel Ships	3.0072	0.00301	13.6	27.3	40.9	54.5	68.2	81.8
Light Fuel Oil Ships	2.7531	0.00275	12.5	25.0	37.4	49.9	62.4	74.9
Heavy Fuel Oil Ships	3.1544	0.00315	14.3	28.6	42.9	57.2	71.5	85.8
Aviation								
Aviation Gasoline	2.4595	0.00246	11.2	22.3	33.5	44.6	55.8	66.9
Aviation Turbo Fuel	2.6070	0.00261	11.8	23.6	35.5	47.3	59.1	70.9
Renewable Fuels								
Biodiesel**								
Ethanol***								

* Tier 1 or advanced control emission factors are used for Tier 2 vehicle populations.

** Diesel CH₄ and N₂O emission factors (by mode and technology) are used for biodiesel.

*** Gasoline CH₄ and N₂O emission factors (by mode and technology) are used for ethanol.