



Refinery-to-Wing Stakeholders Assessment Approach

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The CLH Group

The CLH Group, which comprises Compañía Logística de Hidrocarburos and its subsidiary CLH Aviation, is the leading company in Spain for oil product transportation and storage and is one of the largest private companies in its sector at an international level. In order to do this, it has one of the largest, most efficient integrated oil product transportation and storage networks in the world, with over 4,000 kilometers (2,485 miles) of oil pipeline and a storage capacity of 7.9 million cubic meters (2.087 billion gallons), that are available to all oil operators that do business in Spain. The CLH Group bases its management on criteria of commitment to sustainability, safety, efficiency and collaboration with society as stated in its Mission, Vision and Values.

CLH Aviation is present at most Spanish airports on the Iberian Peninsula and in the Balearic Islands offering a service for the storage, distribution and into-plane supply of aviation fuels. Besides this, CLH Aviation manages and provides advisory and technical assistance services for the installation and maintenance of distribution networks for different types of aviation fuel. It currently manages 5 hydrant networks at the Spanish airports and also provides fuel infrastructure management outside airport precincts.



The aviation industry and the environment

The aviation industry has developed a set of ambitious goals aimed at limiting its climate impact, while enabling it to continue to provide a key vehicle for economic growth. The goals include: improving fleet fuel efficiency by 1.5% per year until 2020; capping net aviation emissions from 2020; and most ambitiously, **to halve aviation CO₂ emissions by 2050, compared to those in 2005**. In order to achieve this ambitious target, the aviation industry hailed in October 2013 a significant development on climate change issues during a meeting of the International **Civil Aviation Organization (ICAO)**, the UN specialized agency for aviation.



Source: www.icao.int/Newsroom

Delegates representing 191 countries signed a resolution charting the way forward in order to tackle aviation's climate change impact. The resolution commits governments to develop a global market-based measure for aviation emissions from 2020, to be decided at the next ICAO assembly, scheduled for 2016. The next three years will be spent on technical discussions as states work on the design elements of such a scheme, including standards for the monitoring, reporting and verification of emissions and the type of scheme to be implemented.

Introduction

The introduction of alternative fuels can potentially help reduce aviation's environmental footprint, providing benefits to airports, their surrounding communities and the airlines they serve. The NARA region Refinery-to-Wing Stakeholders Assessment Approach aims to: **(1) examine SH perceptions regarding the opportunities and impediments for the introduction of biojet fuel; and (2) better understand the process for the implementation of biojet into the aviation fuel logistic system.**

NARA Region Populations of Interest

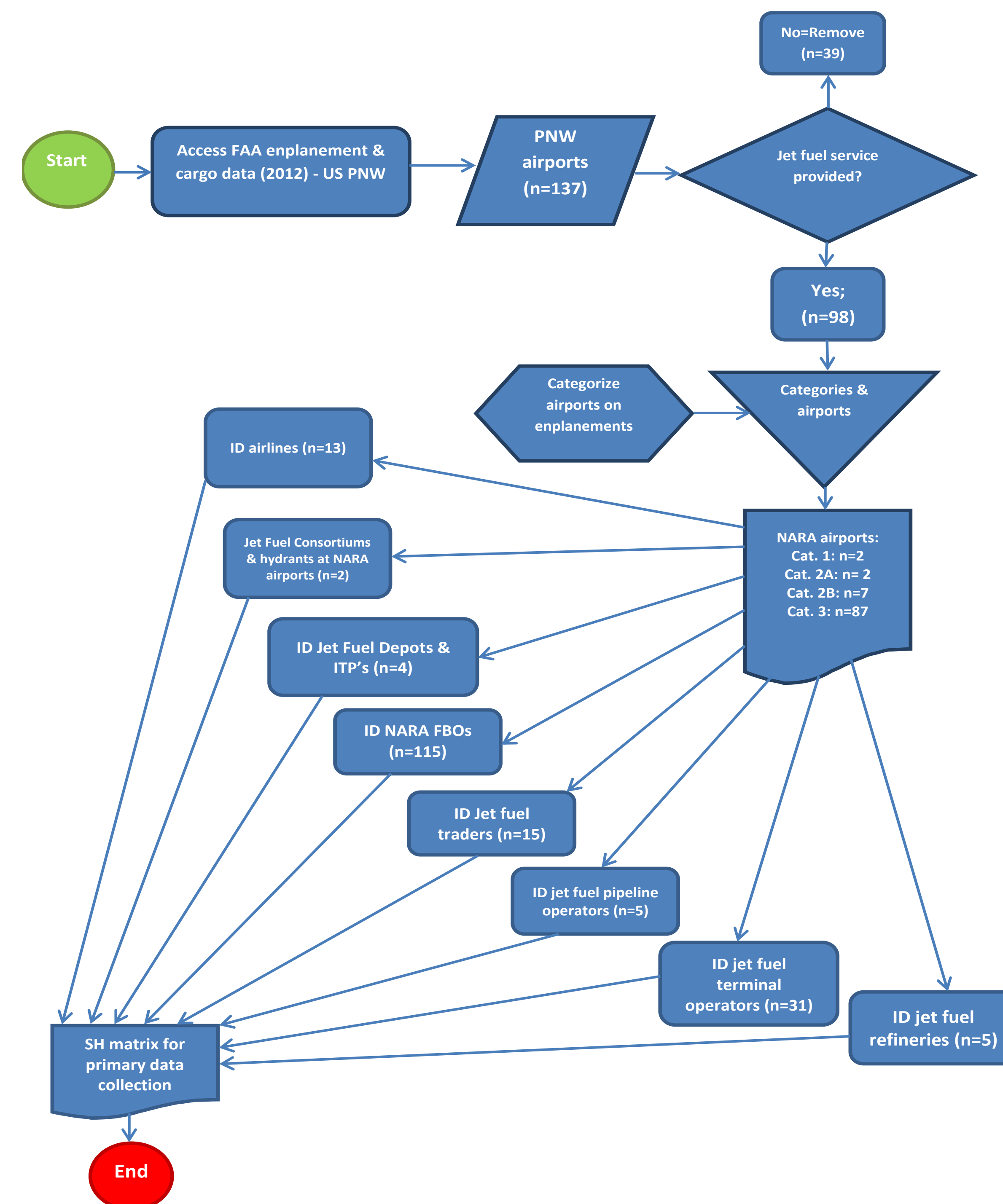
The process started with a literature review to collect as much information as possible.

ID all NARA region commercial airports and determine and categorize them by size using "enplanements" data (www.faa.gov).

Airport Rating	Total airports	% of total Enplanements
Category 1	2	> 20%
Category 2A	2	> 2% - 20%
Category 2B	7	> 1% - 2%
Category 3	87	> 0% - 1%
Total Airports	98	All enplanements

Source: Self prepared

The following flowchart shows our process to identify all relevant stakeholders (SHs) involved in the jet fuel supply chain in the NARA region.

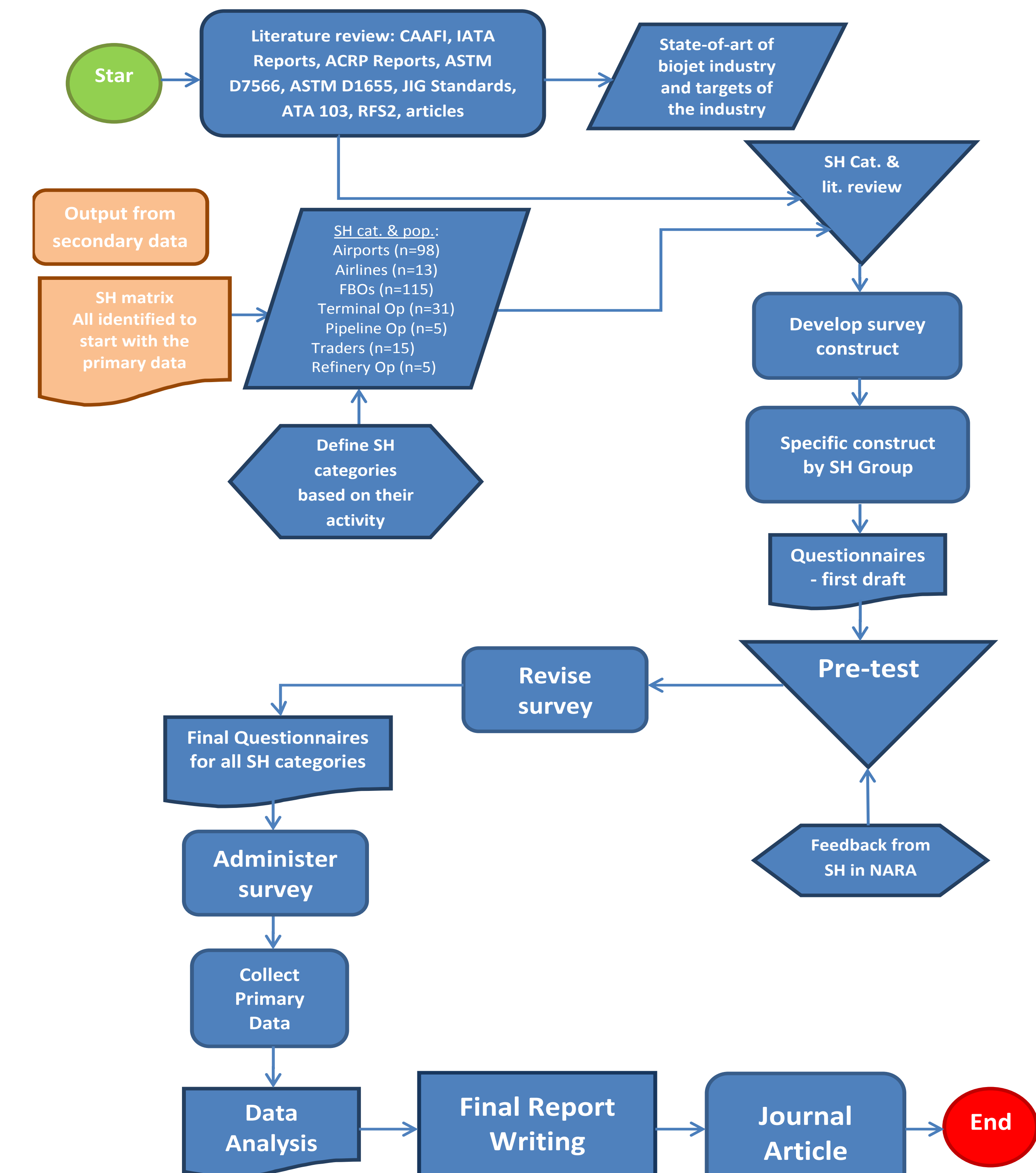


Source: Self prepared

Data Collection Methods

Primary data collection via interviews and surveys will be conducted Fall 2014. Interviews will be conducted at SEA (Seattle) and PDX (Portland) which account for over 77% of the commercial enplanements in the NARA region (Washington, Oregon, Montana and Idaho).

The following flowchart describes the primary data collection process:



Source: Self prepared

Next steps

The next steps on our research will be the following:

- Collect all primary data from the interviews and surveys (questionnaires)
- Analyze if further interviews might be necessary due to relevant information obtained from the primary data collection
- Develop a report with conclusions of the assessment
- Identified best potential locations to promote biojet as an alternative to conventional jet fuel in the NARA region



Northwest Advanced Renewables Alliance

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