

**THE NATIONAL FOUNDRY TECHNOLOGY NETWORK PHASE 2:
ENVIRONMENTAL COMPLIANCE ACTION PLAN FOR
ATMOSPHERIC EMISSIONS AND ENVIRONMENTAL
AUTHORISATIONS AND ENERGY EFFICIENCY STATUS REVIEW
AND GUIDELINE DEVELOPMENT FOR THE SA
METALS/FOUNDRY SECTOR WORKPACK I**

25 May 2022

Objectives of the Status Quo Study

- NFTN commissioned the CSIR Environmental Management Services (EMS) group to undertake an Environmental Compliance and Performance Improvement Study for the Foundry Industry in South Africa; and the Phase 1 – Status Quo Assessment was initiated in October 2019.

Overall objective of the Phase 1 Status Quo study:

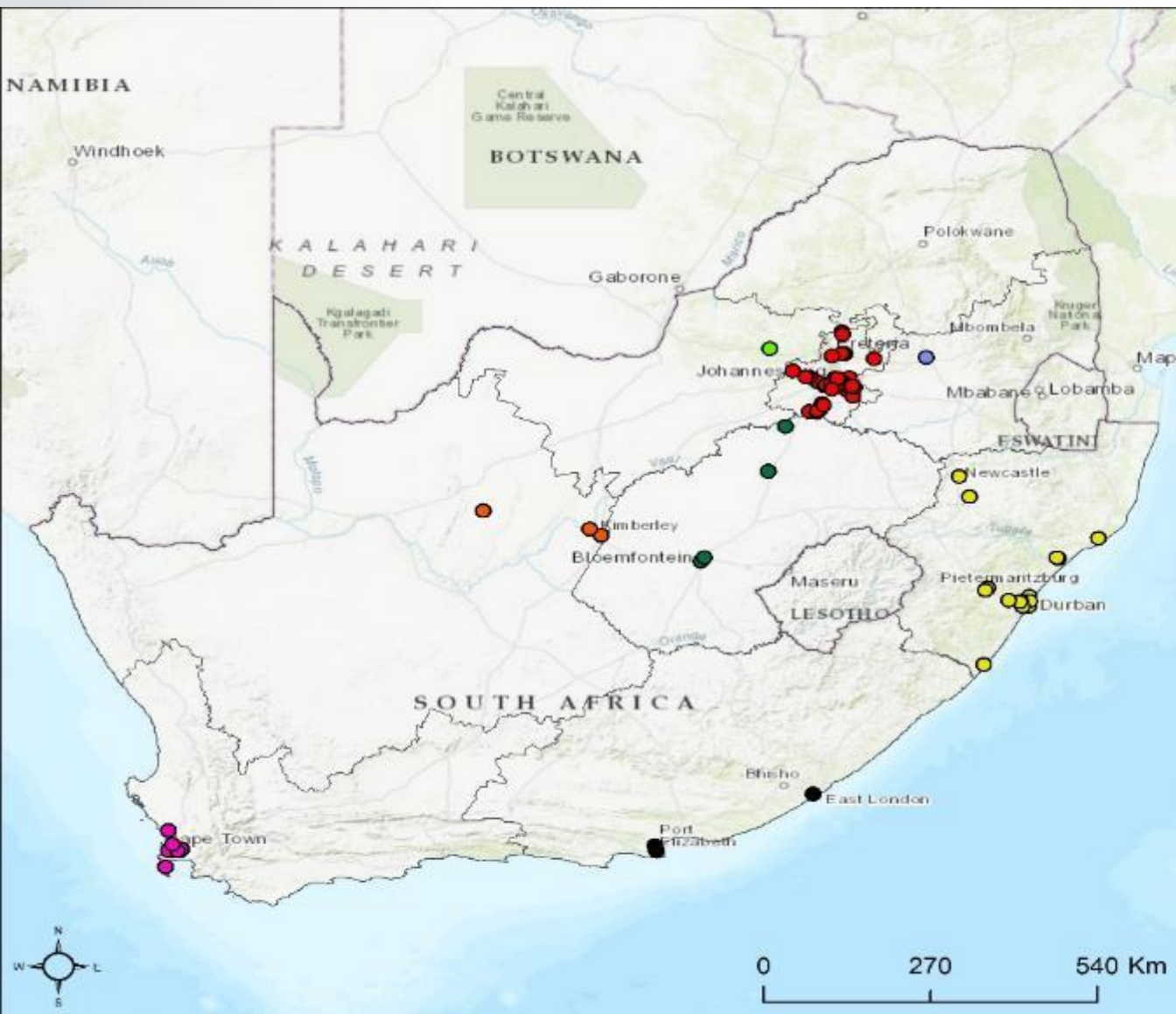
- To provide an informed and up to date overview of the foundry industry in SA that will enable the NFTN to identify measures for implementation to facilitate the recovery of the industry and assist foundries to become sustainable.

Specific tasks of the Phase 1 Status Quo study were to:

- Compile an updated national inventory of SA foundries, across all relevant metals sub-sectors;
- Report on the operational status and context of the foundries (e.g. are they operational or closed) including other operational management factors such as number of people employed, tonnage produced by foundries in the country and electricity usage; and
- Conduct a questionnaire survey and compile a Phase 1 Status Quo Report of the level of environmental compliance of all foundries in South Africa.

Geographical Location of Foundries

Date: June 2020



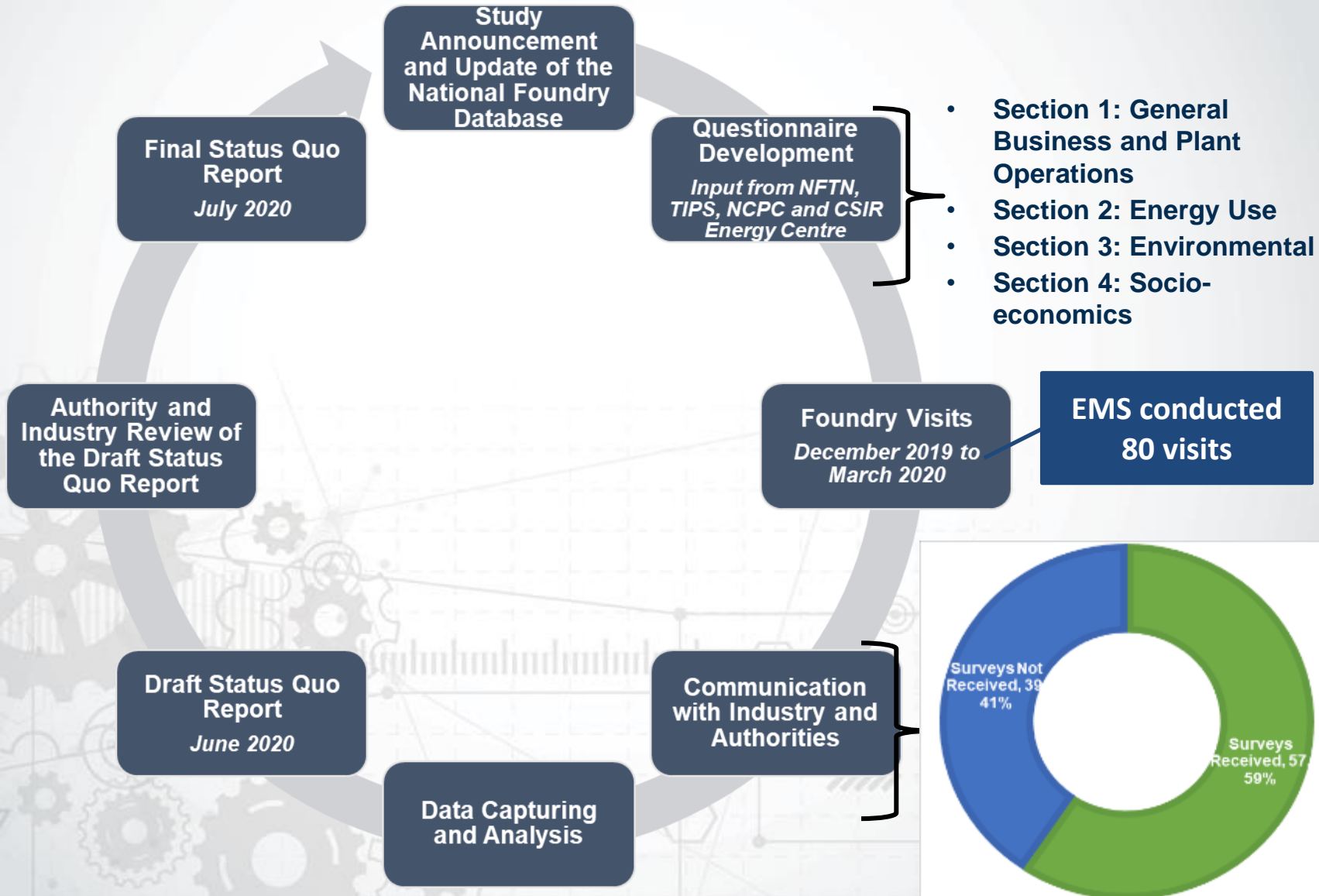
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Foundries per province

- Gauteng (84 foundries)
- KwaZulu-Natal (16 foundries)
- Western Cape (10 foundries)
- Free State (4 foundries)
- Eastern Cape (4 foundries)
- Mpumalanga (1 foundry)
- North West (1 foundry)
- Northern Cape (3 foundries)



Methodology of the Status Quo Study



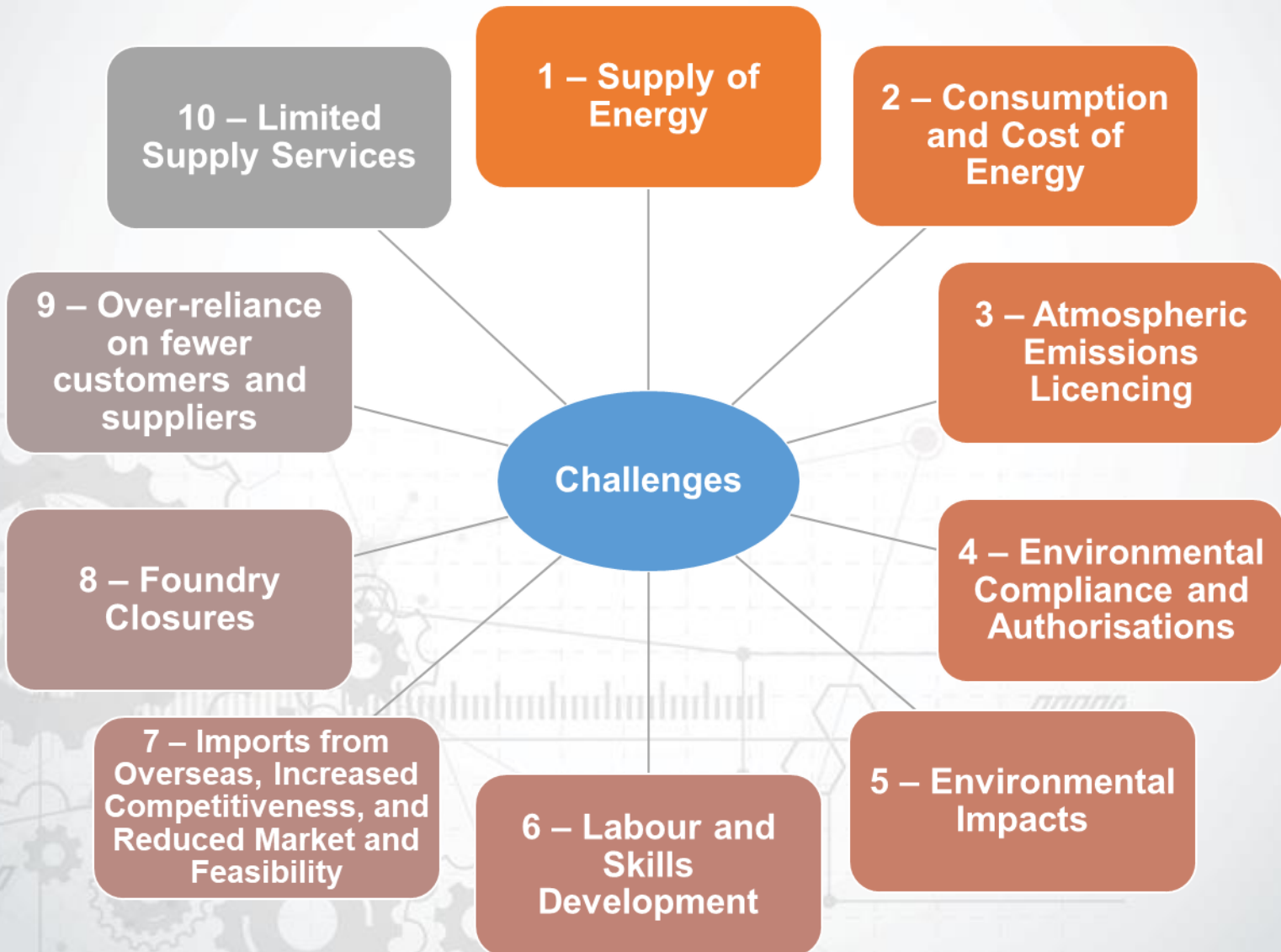
Key Findings from the Status Quo Study

- Based on research undertaken, 57 completed survey questionnaires received and the 80 face-to-face interviews conducted, the Phase 1 Status Quo Report provides substantive and up-to-date baseline information on the operational status and key characteristics of SA foundries as at June 2020.

Aspect	Key findings
Number of Foundries	Total of 134 foundries of which only 123 are operational
Types of Foundries	Ferrous foundries (47%); Non-ferrous foundries (32%); and foundries with both Ferrous and Non-ferrous operations (21%)
Foundry Classification	Jobbing and Production (44%); Production (42%) and Jobbing (33%)
Primary Moulding Process	Sand Casting (82%); Gravity Die Casting (15%); High Pressure Die Casting (7%); Investment Castings (7%); and Low Pressure Die Casting (5%)
Types of Furnaces	Electrical induction furnaces (75%); Crucible (29%); Combustion-based Heavy Fuel Oil or Natural Gas (14%); and Electric Arc Furnaces (9%)
Feedstock Used	Virgin metals (58% of foundries); Raw scrap metals (56% of foundries); and Cleaned scrap metals (58% of foundries)
Tonnage Produced	Metal type with highest tonnage produced annually is Iron in all its variations
Export Potential	From responses, 48% of foundries export and 52% of foundries do not export
Annual Turnover	>R10m (77%); R5m–R10m (9%); R3m–R5m (6%); R1m–R3m (8%); and <R1m (2%)
Employment Status	Total female and male is 5 465 → 89% male and 11% female

Key Challenges faced by SA Foundries

Based on Feedback from Industry, Environmental Authorities and CSIR



Phase 2 – Environmental Compliance Action Plan

- **Overall objective of the Phase 2 Environmental Compliance Action Plan:**
- High-level description of Atmospheric Emissions (where emissions reports are provided by the foundries and/or access to SAAELIP is provided);
- Potential legislative amendments with DFFE; and
- Potential fine reductions with local authorities.



Atmospheric Emissions Licencing

Administrative Fine:

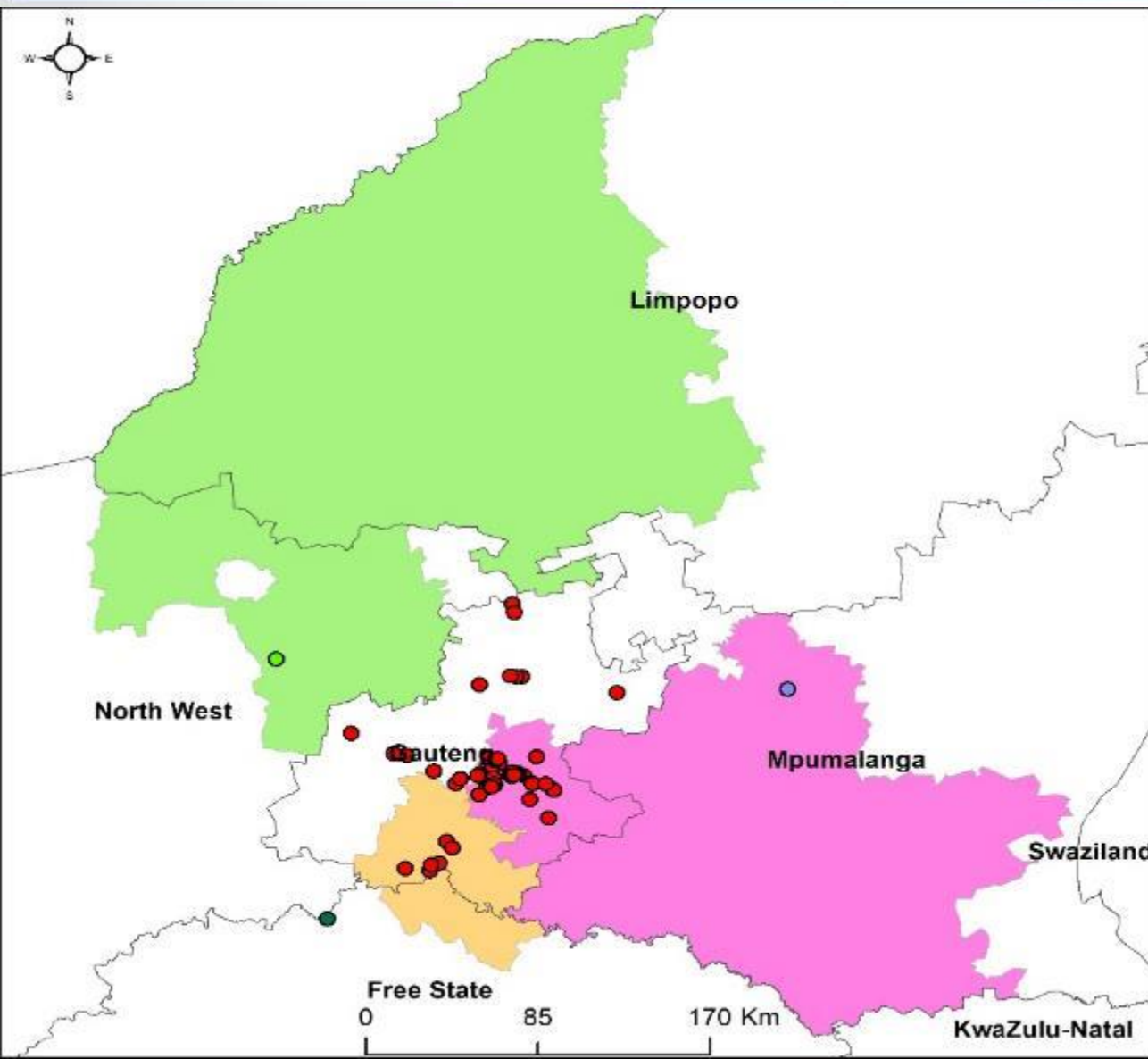
Minimum Fine	Amount
NEM: AQA – S22A	
For operating illegally	R 200 000
Aggravating Factors / Criteria	Additional amount to the minimum fine (if yes)
Each year in which the facility has operated without a license	R 200 000 per year, i.e. each 12 month cycle
The facility for which the application is submitted is in a declared Priority Area in terms of section 18 of the Act	R 1 000 000
NEMA: S24G	
Mandatory for applicant to pay an administrative fine as determined by the CA before the Minister or MEC may take a decision on whether or not to grant ex post facto EA.	May not exceed R5 million

Therefore, if foundries were operating a scheduled process without a Registration Certificate in terms of APPA (any time before 31/03/2010) or without an AEL in terms of NEM:AQA (after 31/03/2010) and without an EA in terms of NEMA (after 07/09/1997), then both NEMA S24G and NEM: AQA S22A Processes will need to be followed [fines applicable for both].

Applications will not be processed or decided on until payment of the fine is settled.

Declared Air Quality Priority Areas in South Africa

Date: June 2020



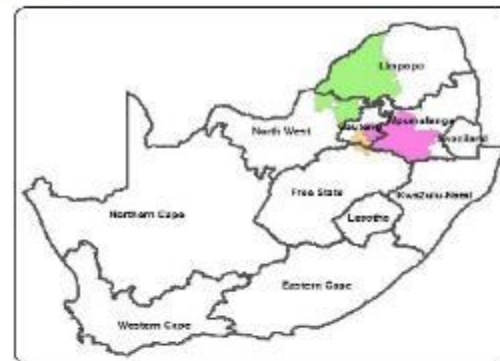
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Foundries per province

- Gauteng
- Free State
- Mpumalanga
- North West

Air Quality Priority Areas

- Highveld Priority Area (47 foundries)
- Waterberg-Bojanala Priority Area (1 foundry)
- Vaal Triangle Airshed Priority Area (8 foundries)



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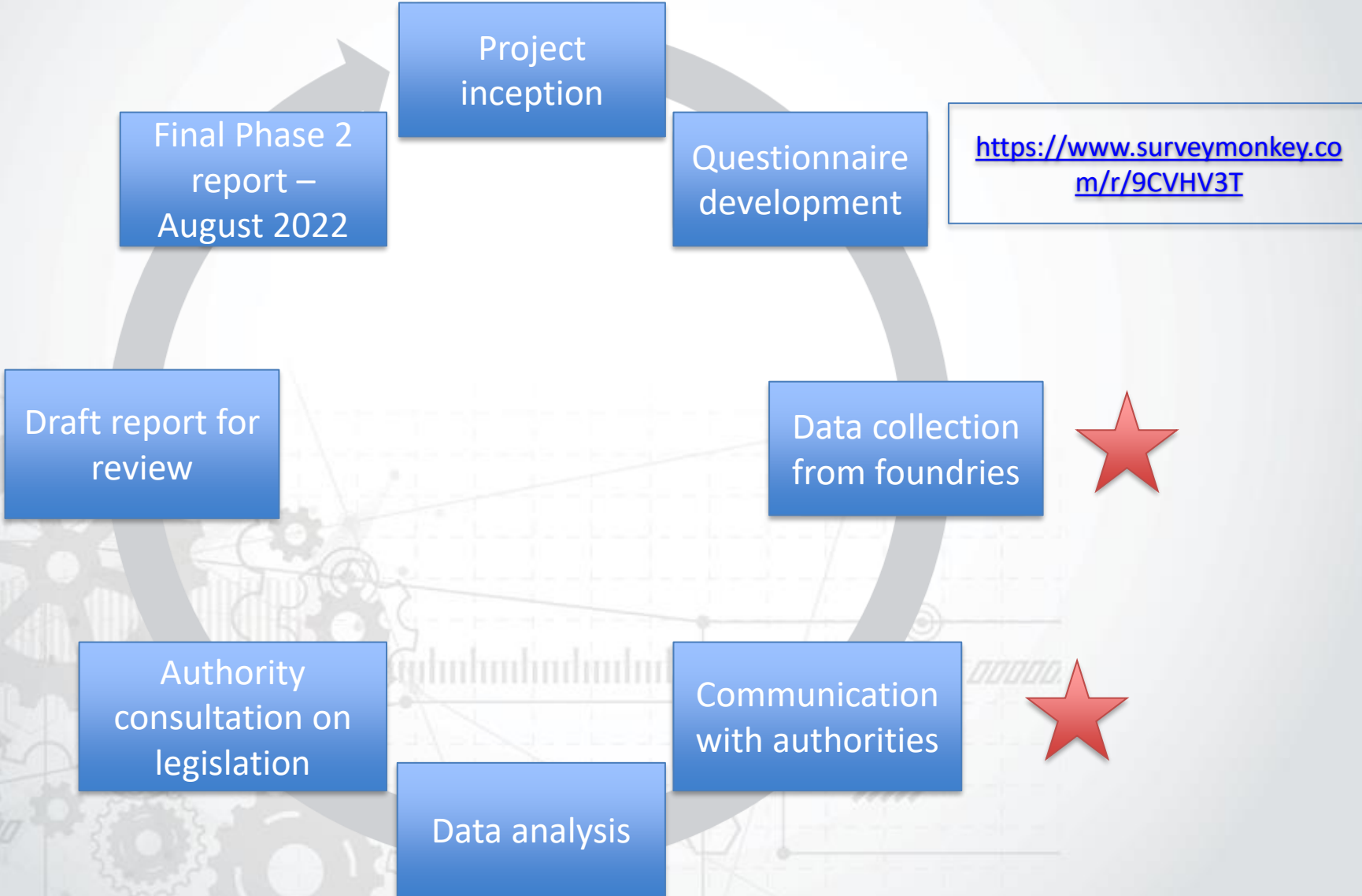
Department
Trade, Industry and Competition
REPUBLIC OF SOUTH AFRICA



Findings of Study – AEL and EA

Foundries with AEL	38 out of 57 General trends: <ul style="list-style-type: none"> • Only 22 provided copies of their AEL • Gauteng has the highest number of AELs issued • Generally a definite requirement for ferrous and most non-ferrous foundries
Foundries without AEL	19 out of 57
Foundries without AEL but confirmed AEL is needed	13
Foundries following NEM: AQA S22A Process	Provided Completed Survey: 1 Meeting Discussions: 6
Foundries established before 1997	40 out of 57
Foundries established after 1997	17 out of 57
EIA Process Conducted	Yes – 22 → 15 received Positive EA [Only 2 provided copies of the decision] No – 25
Foundries following a NEMA S24G Process	3 [Note: These foundries were established in 1999, 2005 and 2011]

Methodology of Phase 2 Compliance Study



Key data sources

surveymonkey.com/r/9CVHV3T



NFTN Phase 2 Environmental Compliance and Energy Efficiency Study Survey

SECTION 1: GENERAL BUSINESS AND PLANT OPERATIONS INFORMATION

1. Please complete all questions in full.
2. Where needed, please select the applicable option.

1. Is the foundry operational post June 2020

*If yes, please complete all questions on the survey.
If no, please only complete Section 1*

- Yes
 No

2. Foundry name



South African Atmospheric Emission Licensing & Inventory Portal SAAELIP - Facility



!!! ATTENTION FACILITY USERS !!!

The AEL Expiry date is a general date. Please email your current AEL to SNAELAdmin@environment.gov.za, to align the AEL Expiry dates.

Welcome to South African Atmospheric Emission Licensing & Inventory Portal - SAAELIP

The SAAELIP is an online portal for applying for an Atmospheric Emission License (AEL) in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) as well as the reporting of emissions data for the compilation of the National Atmospheric Emissions Inventory. The portal allows the user to:

- Create and manage user accounts;
- Submit and manage AEL applications online;
- Track the status of an application;
- Submit emission inventory data & compliance reports;
- Receive e-mail notifications on licensing results;
- Receive e-mail alerts of upcoming reporting obligations; and
- Track historical versions of all applications.

Preliminary Findings from the Phase 2 Study

- To date, 10 completed survey questionnaires received, these are the current Phase 1 Status Quo Report provides substantive and up-to-date baseline results as of 10 May 2022.

Aspect	Key findings
Number of Foundries	Survey ongoing
Types of Foundries	Ferrous foundries (56%); Non-ferrous foundries (33%); and foundries with both Ferrous and Non-ferrous operations (11%)
Main atmospheric emissions	100% particulate matter
Tonnage Produced	Metal type with highest tonnage produced annually is Iron in all its variations



Way Forward – Environmental Compliance Phase 2

OUTCOMES OF PHASE 2 TASKS

Summary report on the potential for fines reductions.

List of foundries that are definitely **compliant** with the NEMA EIA Regulations and NEM: AQA

List of foundries that are definitely **not compliant** with the NEMA EIA Regulations and NEM: AQA and **have** a process underway to rectify non-compliance

List of foundries that are definitely **not compliant** with the NEMA EIA Regulations and NEM: AQA and **do not have** a process underway to rectify non-compliance.

Comparison of measurement data from ferrous and non-ferrous foundries against the legislated thresholds in the atmospheric emission license listed activities.

Proposed national legislative changes (if possible).

NFTN and relevant parties to **prioritize** the foundries that are **definitely not compliant with the NEMA EIA Regulations and NEM: AQA** and that **do not have a process underway to rectify non-compliance**.

Foundries must be **prioritized** in order of **importance** and in terms of their market demand and turnovers, etc.



List of foundries to be assisted in order of priority in Phase 3

The background is a dark blue gradient with various geometric shapes and gear patterns. There are several gears of different sizes and colors (light blue, dark blue) scattered across the scene. Some gears are partially obscured by overlapping translucent shapes. The overall aesthetic is technical and modern.

Thank you

email: aadams1@csir.co.za