**Report Guidelines**

1. **Contents of an IAC Assessment Report**
   1. Foremost, the assessment report should be a tool to assist the client facility personnel in implementing the energy, waste, and productivity recommendations made by the IAC team.
   2. Successful assessment reports provide an accurate, comprehensive record of the IAC assessment visit and reflect an understanding of the production process acquired by the IAC team.
   3. Unit Systems
      * 3.1. Reporting of data should normally be presented in default units as they appear in the database (see sample units below). An exception to this is when the client uses metric or other units because they are of Canadian or other foreign origin. In those cases, metric units (including temperature) should be included in the report but with the default unit equivalent shown in parentheses.
        + Default Units:
          - Electricity Usage: kWh
          - Electricity Demand: kW
          - Natural Gas: MMBtu
          - Water: Tgal
      * 3.2. Uploads to the database should always be in default database units.
   4. Reports should be attractive and professionally assembled in an easy to read format:
      * 4.1. All pages, tables and figures need to be numbered.
      * 4.2. A footer with report number should be included on every page.
      * 4.3. All data used in reports must be sourced from one of the following areas:
        + Measured during assessment
        + Vendor spec sheet
        + Industry standard value
        + Client provided
        + Logical guess from a clearly referenced and reliable source
   5. Useful industrial assessment reports of acceptable quality are expected to include the following:
      * 5.1. **Cover Page**
        + Report Number
        + Date of Assessment
        + School Logo, IAC Logo and DOE logo
        + Contact information
        + Names of the members assessment team
          - Faculty, staff or students who have worked on a report but did not attend the site visit should normally not be included. If they are included, it should be clearly noted that they were not present at the plant.
        + No other organization (vendor, utility, nonprofit) may display their logo on the cover page unless they have contributed financially to the assessment. They may be acknowledged within the report for their support.
      * 5.2. **Disclaimer**
        + The disclaimer should indicate that we only warranty our best effort and not the data or recommendations included in the report.
      * 5.3. **Preface**
        + The preface summarizes and explains the IAC program and assessment. It should acknowledge the DOE, the involvement of students, and the limitations of a one-day assessment.
      * 5.4. **Table Of Contents**
      * 5.5. **Executive Summary**
        + The executive summary should include an overall summary of the assessment and relevant descriptive data. In addition, a summary of the assessment recommendations should be included. It should list the title and value of dollars and resources saved for each assessment recommendation, as well as a brief description of the conservation potential found.
      * 5.6. **Plant Description**
        + Contains the plant size, a general plant layout, what the building(s) is constructed of (if possible), where the offices are located, and the locations of process equipment.
          - Include the client's NAICS code, principle product, facility zip code, number of employees, operating hours, annual sales, and a summary of annual resource use by type, cost, and common units.
      * 5.7. **Process Description**
        + Explains the plant process from beginning to end. It should be apparent to reader of this section that the author has a solid understanding of the facility operations.
        + A process flow chart that maps the production process from raw materials to finished goods is normally an asset to delineate the flow of all resource inputs, waste streams, by-products and finished goods.
      * 5.8. **Best Practices**
        + The best practices section should briefly describe specific practices observed during the visit that the IAC team praises and encourages the client to continue.
          - A minimum of three practices should be included but more can be added.
          - Must be included on every report.
      * 5.9. **Energy Cost Analysis**
        + Should include electrical usage, natural gas usage, fuel oil, and, if applicable, water or sewer data. Other types of energy, i.e. propane, should also be included if they are deemed significant. The energy data should be presented in an easy to read, graphical format, i.e., tables, bar and/or pie charts.
          - The Center should obtain one year of energy data from the company before starting assessment.
      * 5.10. **Major Energy Consuming Equipment**
        + Should include compressors, HVAC (Heating, Ventilation and Air Conditioning), motors, lighting, systems, etc. This list should include the sizes of the major pieces of equipment and their energy requirements.
      * 5.11. **Energy Management / Additional Resources**
        + Section should be included to explain the importance of utilizing formal planning protocols.
          - Advice on the next steps following a report
          - Additional resources such as…

Cyber Security (required)

ISO 50001

Emissions Analysis

* + - 5.12. **Assessment Recommendations**
      * See [Report Guidelines section 2](https://iac.university/admin/guidelines#report2) below
    - 5.13. **Other Energy Efficiency Measures / Additional Recommendations**
      * Smaller recommendations and recommendations with a larger simple payback.
      * Things discussed during visit that should be addressed.
      * Raw plots/data.
      * Other information.

1. **Assessment Recommendations**
   1. Each recommendation included in the report should be self-explanatory and should not require readers to look back at other recommendations or parts of the report.
   2. Recommendations should consider the best action to take to correct an identified problem. Multiple recommendations involving the same identified problem should not be included. Judgment needs to be used here. In some cases, addressing the problem in multiple ways may be necessary. For example, one recommendation might be to change from steam to hot water heating while another may address steam leaks in the current system. Assessment leads may believe including both to be advisable.
      * All recommendations are to be treated independently of each other.
      * Do not base savings on improvements recommended in other parts of the report.
   3. Formatting of the recommendations should be standardized and include the following:
      * 3.1. Table summarizing details.
      * 3.2. Observations from site visit to the facility. Include data, pictures and personal observations.
      * 3.3. Recommended actions.
        + Only include recommendations that have a simple payback of 5.0 years or less. If they have a greater payback, they can be added to the additional recommendations section.
        + Use best judgement when choosing what recommendations to include in the report. The Center should make recommendation on what they say is the preferred approach, do not state them all.
      * 3.4. Anticipated Savings
        + Detailed calculations of assessment recommendations
          - Normally details of calculations are given. In all cases an effort should be made to explain the rationale behind the recommendation.
          - Avoid using black box software solvers, rule of thumb, or ‘in my experience’ as reasoning.
          - Use of the outputs of DOE-approved tools is acceptable and encouraged.

Transparency in all calculations is desired.

* + - 3.5. Implementation Costs
      * Details include both capital costs and "balance of project" costs.
      * Labor costs must be included.
      * A simple payback for the recommendation should be calculated here.
      * The general rule for pricing is as follows:
        + For specific vendors:

The names and contact information of at least 3 vendors must be included.

If a center is aware of only one vendor that produces a specific product, this company can be listed with a statement saying that they are the only known company that produces this product.

* + - * + Industry standards using tools such as RSMeans is acceptable.
        + If a recommendation is referring to a common product (ie. lightbulbs), then the use of a single generic vendor is acceptable.
    - 3.6. Use of Experts/Consultants
      * In cases of low payback, it is recommended to take advantage of consultants or experts that have knowledge in the specific area which can be included as a part of the implementation cost when appropriate for the recommendation.
  1. In the case of multiple meter systems with varying rate structures, a table specifying which meter(s) is associated with which recommendation is required.
     + Please also clearly state which rate structure/unit cost is being used for each recommendation or if an overall meter average is being applied.

1. **Post Assessment Report Requirements**
   1. The Technical Field Manager will critique all assessment reports.
      * The critiques will be a combination of comments and suggestions. Some will request that changes be made and a revised report be uploaded.
      * Review and response to critiques is expected within 30 days.
   2. The company will be notified of the completed critique by the center.
   3. One half-pager report summary – approved for public release – must be completed by the center per year.
   4. Implementation reports should be sent to the Technical Field Manager via the ActLog within 6-9 months of the plant visit. Centers should inquire from clients about potential Case Studies at this point and obtain quotes and other pertinent Case Study information from plant personnel. Special attention should be given to acquiring replication and spin-off information.
   5. If a client cannot be contacted within the 10 months to obtain implementation status information, an N21 (could not contact plant) code may be entered into the Technical Field Manager's database. The center must maintain and forward a record of at least 5 contact attempts to the client. If the data is later obtained, the values in the database will be changed. It is unusual to have more than one client in a year that cannot be contacted. The record of the calls and reason for using the N21 code should be emailed to the Technical Field Manager.