

## Progress Report 1 Evaluations

Scores (Held up by another group this time. Included the ones from Group 1, which submitted them anyway.)

Group	(sorted scores)									(sorted scores)									Report		
	Sum									Sum									Sum	Total	÷ 8
1	4	4	3.8	3.3	3	3	2.7	2	25.8	13	12	11	10	10	9	8.9	7.5	81.4	107.2	13.4	
2	4	4	3.9	3.8	3.8	3.7	3.5	3	29.7	13.8	13.5	13	13	12.8	12.8	12	11	101.9	131.6	16.5	
3	4	4	4	4	3.9	3.8	3.7	3.5	30.9	13.9	13	13	12	12	11.5	11	10.5	96.9	127.8	16.0	
4	4	4	3.9	3.8	3.5	3.3	3.3	3	28.8	13.9	12	12	11	11	10.5	10	9	89.4	118.2	14.8	
5	4	4	3.9	3.8	3.5	3.5	3.3	3	29	13.9	13.5	13	13	13	12.5	12.5	11.4	102.8	131.8	16.5	
6	4	4	4	3.9	3.8	3.7	3.5	3	29.9	14	14	13.9	13	13	12.5	12	12	104.4	134.3	16.8	
7	4	4	3.9	3.9	3.7	3.7	3.5	3.5	30.2	13.9	13	13	13	13	12.3	12.2	12	102.4	132.6	16.6	
8	4	4	4	4	4	3.9	3.6	3.3	30.8	13.9	13.5	13	12.5	12.5	12.5	12.5	12	102.4	133.2	16.7	
9	4	4	4	4	3.9	3.7	3.6	3	30.2	13.9	12.2	12	12	11.7	11	11	11	94.8	125	15.6	

**Verbatim comments in random order.** That included some very unprofessional comments. But you should read that and make your own call.

## Presentations

### Group 1

- The report wasn't that detailed and he didn't go over anything on his choice of coal or gasifier. Wasn't quantitative at all and very general.
- From one group:
  - Reversible water gas shift reaction does not reach equilibrium in the gasifier. Water gas shift reaction occurs in the separate reactor.
  - Did not include coal analysis/selection
  - Did not discuss gasifier technologies
  - No flow diagram
  - No safety/environmental considerations
  - Good pace in presentation; easy to follow. Good presence.
- Give more info than is included in the problem statement.  
Excellent presentation but cite images.
- Wrong format of the report; No process design description;  
No selection on coal and gasifier; No environmental/Safety;  
Timeline and Budget Part is not necessary
- • The presentation did not go into any detail about the process or coal selection. Overall it was vague at best.
  - The paper did not talk about coal choice or gasification techniques. It was not informative. Did not follow the criteria for the paper.
- No choice of coal or gasification process, calculations, or figures. Poor layout and grammar. Good broad, overall process description and scope, mention of ASPEN.
- From one group:
  - Good grasp of problem scope
  - No coal selection
  - Very little technical content
- Presentation: There was a strong introduction and process description. However, it seemed to be a lot of

extra information in the presentation and there wasn't as much discussion on the selection of coal.  
Report: For format, there needs to be page numbers. The introduction and summary were good, but there was no consideration of coal selection, safety and environmental considerations, or an alternatives section.

## Group 2

- \*Compliment:\* Holy smokes Batman you write a lot! Great design, it is obvious you prepared very well and critical thought out the design project and requirements. Firm grasp of understanding what is expected. Excellent formatting. Process well explained. A well written report to be proud of.  
\*Improvements: \*Can you be more concise, or is 9 pages and 2,844 words needed? You decide, maybe it is. Since this is a "proposal" include deliverable and a timeline, what is the significance of doing the project? Approach as if you are trying to convince your "up line" ( I hate the word boss) that you want to do this project.
- From one group:
  - Good discussion on the safety/environmental considerations
  - Not enough justification of tables and technology selection
  - No conclusion
- Excessive discussion of safety for preliminary design, no abstract. Good organization and presentation of data, block flow diagram.
- • David did a great job overall with his presentation. He had a good explanation of the problem statement and safety considerations. However, the units were not converted to metric tons as it was decided in class.
  - They had a very detailed explanation of the plant, safety information, choice of coal, and did a good job with the BFD. However, they included HHV, which was not relevant to the problem, did not convert to metric units, and did not have a conclusion.
- Good Format of the report  
There are no page numbers on the report, and there are no citations.  
Block diagram is clear and the data are well-presented.  
Some point was deducted since the report was handed after due date
- Presentation: The presentation had a strong introduction section and good visuals.  
Report: For format, there needs to be page numbers. The report was very solid, with good figures, and thoughtful environmental and safety considerations.
- Good use of tables but keep consistency in gas naming. Talk more about reasons for using entrained flow reactor. Clear well detailed.
- The report was very thorough and covered a lot of things including coal selection, gasifier technology and environment. But the formatting was poorly done.

## Group 3

- \*Compliment:\* This groups kicks much burro! Josh don't put your hands on your shirt:) You were the only group to really think outside of the box and approach the problem from a 20,000 feet view. Industrial engineer assumptions and projections are excellent and impressive. Any time you get a group to accept your logic and assumptions, as you did with your approach to choosing coal, shows you understand the situation.

- \*Improvements: \*Looking forward to reading your proposal and design next week. Visio diagrams smaller perimeter and use bigger fonts.
- From one group:
  - No description of calculations and figures.
  - No safety/environmental considerations
  - No description of gasifier technology
  - Description of problem is short and broad
  - Good presence whilst speaking; relaxed and easy to listen to. Explained economic analysis in the presentation, but not in the report.
  - No gasification process choice, graphs/figures in appendix hard to understand. Inclusion of appendix was good despite poor explanation.
  - To the point problem statement, good quantitative analysis, results very clear in the graphs, the presentation of the calculations on the report could have been better.
  - Extremely Poor Layout and No explanation of the Tables
    - Inconsistent use of significant figures
    - No environmental/safety
  - Short but had good appendix. Excellent graphs, very thorough analysis on reasons for choosing a specific coal.
- From one group:
  - Good effort with calculations
  - Not enough explanation on calculations
  - Use a better structure of the paper
- • The talk was very good, but it suffered the same mistake as the report. The incorrect block flow diagram discounted the presentation.
  - Group 3 did a decent job of introducing the problem. They also addressed the coal selection with a quantitative approach, but it was not clear what assumptions were made, and how they completed the calculations. On a grammatical note, I don't think equations should be part of a sentence.

#### **Group 4**

- \*Compliment:\* You've convinced me to buy a couple coal minds around the block. Natural speaker and comfortable in front of a crowd. Expansive on the subject of energy on a global scale. Excellent starting point to understand why we are doing this project. Neat fact that coal is expected to last 216 years. Makes me wonder why the US is trying to deplete crude oil throughout the world at a rapid pace. You connected all the dots. Process explanation is accurate, to my knowledge, and quantitative.
- \*Improvements: \* I could be totally wrong, but maybe spell out your units instead of abbreviating e.g t to tons. 4th Paragraph on Background and Theory states that emerging markets, specifically China, are creating a surge in demand for alternative energy sources. Not true. China and other markets, as such, are draining the supply of current green house gas producing energy sources because they are using old technology. It's this drain on US supply that is creating the need for US to reinvest in it's infrastructure to develop alternative energy sources. But maybe I'm wrong on this one too.
- Significant figure is good; Discussion on coal selection is quite good

No project objectives; No reference; No clear process design description

No environmental/Safety

The tables should be put in front of the text before being mentioned in the text

Tables should have title to indicate what data are shown

- • Presentation was very good, ideas were expressed efficiently and thoroughly.
- Paper had a few grammatical and formatting errors. Coal decision was based on heating values which we were told is incorrect. A few repetitive parts, but all around, a good paper.
- From one group:
  - Objectives of the project and paper were not well-defined
  - Good effort on calculating amount of coal required
  - Need more justification
- Presentation: The presentation was a short. There was a good introduction, but I felt more the process in deciding the coal could have been more detailed.  
Report: For format style, points were taken off due to no page numberings, no breakdown of the workload on the title page and no reference/citation section. There were many errors in the writing which lead to a deduction of points as well. The report needed to include the problem statement and description, but it seemed that a lot was similar to the project prompt. There was no discussion of the overall goal of the project. There were no titles for the tables.  
The analysis of the different factors in coal selection was solid as it considered the importance of the coal's HHV and other environmental factors.
- From one group:
  - No mention of the gasifier technologies
  - No safety/environmental considerations
  - No reference section
  - No transition from tables to text
  - Noticable grammatical errors
  - Lack of stage presence in presentation. Said "uh" too much
  - Thorough coal analysis
- Need to sound more technical don't need to go over every step of calculations in discussion. Very nicely detailed.
- Poor design basis (HHV irrelevant), failure to choose gasification process, poor grammar, no references. Good process description.

## **Group 5**

- \*Compliment:\* Your team has the coolest font and you used color! Neat. Great to add a cover letter. Can tell you put a lot of effort into the formatting and it paid off. Looks sharp. Process diagram is quantitative and thorough. Your team understands and correctly explains what the deliverables are and had a well thought out coal analysis. Glad to see a recommendation.  
\*Improvements: \*Remove the phrase "In fact," it's a filler word like mash potatoes on a dinner plate. Just give me the steak. Add a reference page, otherwise I'll think your really really really smart and came up with all this information by just thinking about it over coffee.
- Summarized a lot of info in tables, uncluttered, relevant info.  
Good presentation.
- No references or safety considerations. Good process description and good coal choice basis

description. Good layout and presentation.

- From one group:
  - No references
  - Good formatting of report
  - No safety/environmental considerations
  - Aside from no references and no safety considerations, the rest of the report is well done and complete
  - Had dark slides for presentation which made it difficult to read. Looked at the laptop too much.
- • Josh gave a good presentation. The graphs supported his group's conclusion well as they were easy to see and well explained. However I think he could have discussed the method used to produce the graphs.
  - Group 5 had a very good report. Every section was well developed and informative. The choice of coal was explained thoroughly with logical reasoning. The only mistake was in their block flow diagram: the location of the acid gas removal unit.
- Good abstract but introduction too long, need to be a little more succinct.
- Good Explanation of Table; Good format of the report
  - No references, page numbers, citations, and title page.
  - No environmental/safety issue in the report.
- Presentation: The presentation had a good comparison between the different types of coal and had a solid introduction. The section on gasification technology was also good.  
Report: For format style, points were taken off due to no page numberings, no title page and no reference/citation section. The cover letter is not needed.  
The report is well written and contains everything asked for by the prompt. The tables and figures are well presented. Overall, this is a very well composed report.

## Group 6

- \*Compliment:\* Caesar himself! Norman you speak very well and with authority. Good job. You all have done a lot of background reading, totally necessary and appropriate to grasp this tough assignment. A well informed paper on gasification. I think you may be the only group to speak about IGCC tech.
  - \*Improvements: \*Add subheading so I know you transition from one topic to the next. Like when you write about fluid beds, put "Technology" as a sub header. Yes I need to be lead by the hand. No one wants to read a 20 page paper on gasification (except you know who) can you be more concise? I'm afraid your paper will grow and grow in the next phases.
- From one group:
  - Good details on the processes and environmental/safety information involved on the project (very thorough)
  - Should make paper more reader-friendly (e.g. put in headings and tables)
  - No conclusion
- From one group:
  - Analysis of the coal choice and gasifier is well done (explained thoroughly)
  - Had no charts/tables which would have made the report more concise/easier to read
  - Included a safety/environmental section

- Referenced throughout the report
- Demonstrated excellent overall understanding of process
- No eye contact in presentation. A bit rushed, but sold.
- Figures such as transportation fee, etc, can be summarized in a table from which is much easier to read
- Overall great effort on the report
- Presentation: Overall, it was a solid presentation and contained all the important information.
- Report: The report is well written, thorough, and includes a strong safety and environmental considerations section. The format is also very good.
- • The presentation was informative, their coal choice was clear and justified. All gasification techniques were presented and the chosen method was justified using the chosen coal type. The presenter clearly demonstrated that he understood the process.
- The paper covered and explained all steps of the coal gasification process. The only section that the paper was lacking was a clear and complete explanation of the chosen coal. Also, the paper did not have proper formatting.
- Obviously did the reading, but try and be more concise and show how information affects design
- Gave a good technical description of different gasifiers. Very clear.
- Clear and informative but would be better if there was a clear conclusion.

### **Group 7**

- \*Compliment:\* Steven's got the sickest tat! Simi good presentation. You may be the only that cared enough to wear professional attire, excellent job.
- Uhm I would of too, but I was on 3 hours sleep. You have the kind of paper I would try to pass off as my own. Hand this over to a boss and your hired.
- Concise with an ability to fully explain in detail yet keep it short and to the point. As Tony Soprano said to a poor Sicilian, "it's not important what decision you make, but that you do it in a timely manner". Recommendations are excellent. Calculations and graphs appear to be sound and follow engineering rule of thumb logic.
- \*Improvements: \*At this phase it's important to have a thorough intro, but as the project proceeds rethink if your intro truly requires as much text as you put in. Do you think because you put your recommendation in 14 font it is more impactful :) ? Throw a graph or two in there with some numbers.
- Brief report, no block diagram, no references. Well spoken.
- Presentation: The presentation did not include a discussion of the project description or an introduction. However, there was a good comparison between the types of coals. She also talked about the gasifier technologies, which not many groups covered.
- Report: For format style, the title page needed to include the breakdown of the workload and a reference section was needed. The report gave a thorough evaluation of how to select the coal and additional technologies.
- From one group:
  - No tables or flow diagram
  - Clear, concise, and well written report
  - Analysis of both coal and gasifier selection was good
  - No mention of safety/environmental
  - Included recommendation section
  - Clear and easy to follow presentation. Good presence and pace

- Very detailed project description
  - Demonstrate understanding in problem statement
  - No reference and environmental/safety issue
- No references or tables. Poor presentation of data. Thorough design basis and process/project description.
- Very nice, clear and concise
- From one group:
  - Good effort on looking ahead (beyond gasification)
  - Good structure of paper
  - Not enough justifications of technology selection; alternatives weren't presented
  - Tables recommended

### Group 8

- *\*Compliment:* As The Donald would say, "Your fired"! Just kidding. Love the format pseudo professional company. Must be the entrepreneurs in your group attacking this design problem as a business opportunity that gave your group a notch up. Well written and communicated.
  - \*Improvements:* *\*Make the tables a square not a missing corner square. On your process block take away the baby blue and make it white, unless your a die hard charger fan, then its cool. Orientate the page by using the page setup and make it landscape. Only one reference need for gasification bible we all read.*
- For presentation: Words are too small to read
  - For report: This report is very good in general, just have some minor mistakes.
  - Not detail on the title page: No Date; No mention this is a progress report
  - No objective; Wrong page number order
  - No mention methanol refining process and gasification method to be used
- Presentation: The best presentation. The objectives and process description were well delivered, and there was a discussion about the environmental considerations of the process. The process for selecting coal was clearly identified.
  - Report: The title page needed to include the breakdown of the workload, date submitted and other information. Overall, the writing was solid and included a thorough evaluation in selecting the coal type, gasifier technology, while presenting the environmental concerns.
- good citing of reference, neat writing, infomational
- From one group:
  - Include tables and flow chart
  - Although it is included, coal selection analysis was lacking. Did not talk about sulfur in analysis
  - Talks about the gasifiers, but again no real analysis of gasifier choice
  - Good referencing throughout the report
  - Needs more voice projection in presentation. Thought ahead about recycling wastes, and that was reputable
- From one group:
  - Very good figures (BFD) and tables
  - Good research
  - Recommend better logical arrangement of materials

- No conclusion
- Incomplete basis for choice of coal, no clear choice of gasification technique. Good description of techniques, including Claus process. Good presentation.
- • Sasha did a great job overall. She had very good visuals by using the bar graphs for the cost analysis.
- They had a good understanding and background. However, they did not have a clear justification to why the Montana coal was chosen, did not convert to metric units, had missing components in the BFD, and did not have a conclusion.

### Group 9

- \*Compliment:\* The three wise men! Clear and concise processing description. It's obvious you understand the requirements and considerations in the Chem E project. Near equilibrium assumptions seem logic and correct. Clear and appropriate for what a proposal is expected at this phase.
- \*Improvements: \*The intro is a mesh between an "abstract-summary-intro" make it one or the other. Use some graphs and illustrations to explain the process following a graphical, analytical, and technical approach to more clearly explain the process.
- From one group:
  - No economic analysis of coal
  - Good format of report
  - Although included some safety aspects, it could have been a more detailed section
  - No tables, no charts, no flow diagram
  - Could have gone more in depth in report
  - Need to look at audience more in presentation; Had a good pace.
- Little safety/economic design basis, few figures/tables, repetitive. Thorough description of design parameters and requirements.
- • Presentation was concise and addressed topics that were important.
  - Paper was repetitive with no clear justifications for coal or process type. The conclusion was one sentence and the second reference was not used. Process description covered all bases but did it very briefly.
- Presentation: The presentation was well spoken, with a good analysis and also gave good reasons on how the gasification technology was chosen.  
Report: The title page needed to include the breakdown of the workload. There needed to be more discussion and calculations/results of how the coal was selected. Likewise, more details needs to be given in the coal gasification section.
- From one group:
  - Structure of paper was good; results are clearly stated
  - Need more justification of technology chosen
  - No tables
- a bit short, more elaboration on calculation of why choosing sub-bituminous
- Brief report, no abstract, no block diagram, poor referencing.  
Efficiency calculations were pretty informative.

### Instructor's two bits

The class comments are *long* and thorough enough! So I'm not adding any more than it is necessary.

*Expectations in progress*

- If nothing else, we should have a good “handle” on the gasifier.
- And a reminder, one more time:
  - State clearly the design basis and the product specifications.
  - Have proper physics and thermodynamics in the description/discussion of processes.
  - The BFD should make sense. And it is not just a block diagram! There should be flow rates. Or use a stream table if you find it easier even with a BFD.
  - Make sure the materials are well organized and clearly laid out. Make effective use of figures and tables. Make sure you have all the “nominal” sections that a report should have.
  - Spell check.
  - Significant figures!