

July 13, 2010

Tips for Effective Communication

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**Concentrating Solar Technologies
Sandia National Laboratories**



Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.



Sandia National Laboratories



Overview

- **Written Communication (E-mails)**
- **Oral Presentations**



Effective Writing

- **Three “golden rules” of writing**
 - Design your writing in terms of audience and purpose
 - Make important things stand out
 - State your information simply, clearly, and directly



Tips for Effective E-Mail

- Write a meaningful subject line
- Format the message to make it readable and focused
 - Include a salutation
 - Make important things stand out; avoid attachments
 - Include a closing with contact information
- Proofread and be professional
- Reply promptly



Subject Line



Subject: [Blank]



Subject: “presentation”



Subject: “Optics presentation for your review”



Subject: “Important! Read Immediately!!”



Subject: “All cars in north lot will be towed in 1 hour”



Format the Message for Focus and Clarity

Optics presentation for your review - Message (Rich Text)

To... Ho, Clifford K;
Cc... Mancini, Thomas R; Kolb, Gregory J; Siegel, Nathan Phillip;
Subject: Optics presentation for your review

I took a stab at putting together a presentation on the optical analysis. i need your help with some of the plots, tables, and results. i didn't know if I should use a table or a plot to present the slope errors and what some of the results meant
need your comments back Friday.

Format the Message for Focus and Clarity

 Optics presentation for your review - Message (Rich Text)

To... Ho, Clifford K;
Cc... Mancini, Thomas R; Kolb, Gregory J; Siegel, Nathan Phillip;
Subject: Optics presentation for your review

Hi Cliff,

I have attached a draft presentation of our optical analysis for your review. Can you please review it and provide comments by this Friday?

Specific questions and needs are as follows:

- Slide 3: Is the plot appropriate, or should I use a table?
- Slide 5: Did I interpret the results correctly?
- Slide 9: Please add your results to the table.

Please let me know if you have any questions.

Thanks,

-Cliff
844-2384



Avoid “TLTR”

Too Long Too Read

SOLERGY comparison with SAM-Tower - Message (Rich Text)

File Edit View Insert Format Tools Actions Help

Reply | Reply to All | Forward | Arial 10

From: [REDACTED] Sent: Fri 7/9/2010 11:10 AM

To: 'Wagner, Michael'

Cc: 'Turchi, Craig'; Ho, Clifford K; Mancini, Thomas R; 'Mehos, Mark'; Harley, Charles; Tillerson, Joe R

Subject: SOLERGY comparison with SAM-Tower

Hi Mike,

The attached file is the SAM model that I compared with SOLERGY. It is a 1000 MWt receiver, 160 MWe(g) subcritical turbine, with 15 hrs of storage. The comparison was performed according to the following steps:

1. Rather than using the SAM Wizard, I used standard DELSOL to determine the heliostat field layout, tower height, and receiver dimensions, i.e. the optical design. I then input this optical design into SAM.
2. Standard DELSOL was used to develop the "field efficiency matrix" for SOLERGY (attached). (I know that SAM also generates a field efficiency matrix but I don't know how to view it to see if it is the same as SOLERGY's.) The SOLERGY model used this matrix plus many parameters to represent the rest of the plant. The SOLERGY parameters were developed using the procedures described in Chapter 5 of the "Second Generation Central Receiver Technologies" study published in April 1993.
3. I modified the existing SAM parameters to match the SOLERGY parameters "the best that I could" and the values I chose can be seen in the attached SAM file. However, SOLERGY has more parameters than SAM since SAM has additional internal models not included SOLERGY. For example, SAM calculates receiver thermal losses and SOLERGY just inputs a thermal loss via a parameter. In general, the SOLERGY parameters I input are based on data from Solar One and Solar Two and the US Utility Studies (from 1988).
4. Both models were run with the same TMY2 data set from Daggett assuming 100% plant availability. SOLERGY needs 15-minute time step. To create the SOLERGY weather file I reproduced the hourly file 4 times. For example if the DNI at noon was 1000 W/m² in the hourly file, SOLERGY used that value at 12, 1215, 1230, and 1245. Thus, I did not interpolate between the 1200 and 1300 DNI hourly values to get the quarter-hour values. I don't know what the TRNSYS time step is in SAM or how you interpolate the hourly data.
5. Both codes were run. SAM predicts about 10.8% more net annual electricity than SOLERGY. I then compared the detailed response of plant on a couple of days (mostly May 12th) and identified the several differences in the models. See the attached PDF to better understand the list below. The hand-scrawled notes in this PDF are pretty cryptic so give me a



Proofread and Be Professional

- **Avoid typos, inaccuracies, and embarrassment**
 - E-mails are important records; they need to be accurate
 - “Unprofessional” e-mails may give a poor impression of the sender
 - Poor grammar
 - Chain letters, jokes, “funny pictures,” etc.
 - Assume somebody other than the intended recipient (e.g., the media) will read your e-mail



Reply Promptly

RE: SOLERGY comparison with SAM-Tower - Message (Rich Text)

To... Kolb, Gregory]

Cc...

Subject: RE: SOLERGY comparison with SAM-Tower

Hi Greg,

I can't address your request right now, but I will be able to respond by Wednesday.

-Cliff

From: Kolb, Gregory]
Sent: Friday, July 09, 2010 11:10 AM
To: 'Wagner, Michael'
Cc: 'Turchi, Craig'; Ho, Clifford K; Mancini, Thomas R; 'Mehos, Mark'; Hanley, Charles; Tillerson, Joe R
Subject: SOLERGY comparison with SAM-Tower



Tips for Effective E-Mail

- Write a meaningful subject line
- Format the message to make it readable and focused
- Proofread and be professional
- Reply promptly



Overview

- Written Communication (E-mails)
- Oral Presentations



Tips for Effective Oral Presentations

- **Same “golden rules”**
 - Design your presentation in terms of audience and purpose
 - Make important things stand out
 - State your information simply, clearly, and directly
- **“Platinum Rule” for oral presentations**
 - Tell ‘em what you’re gonna tell ‘em
 - Then tell ‘em
 - Then tell ‘em what you told ‘em

Avoid Clutter

Parabolic Trough R&D

ALCOA FOA

SKYFUEL

FPL Energy

SUNRAY



ADV CSP Concept

Receiver Hamilton FOA

Bright Source

SKYFUEL FOA



Thermal Storage R&D

Hamilton FOA

Rocketdyne FOA, ABENGOA,
SENER, Solar
Millennium FOA

Solar Thermochemical H₂

General Atomics

UNLV, NREL, CU, ANL

Use Animation Features in Powerpoint to “Build” Slides

Parabolic Trough R&D

ALCOA FOA

SKYFUEL

FPL Energy

SUNRAY



ADV CSP Concept

Receiver Hamilton FOA

Bright Source

SKYFUEL FOA



Thermal Storage R&D

Hamilton FOA

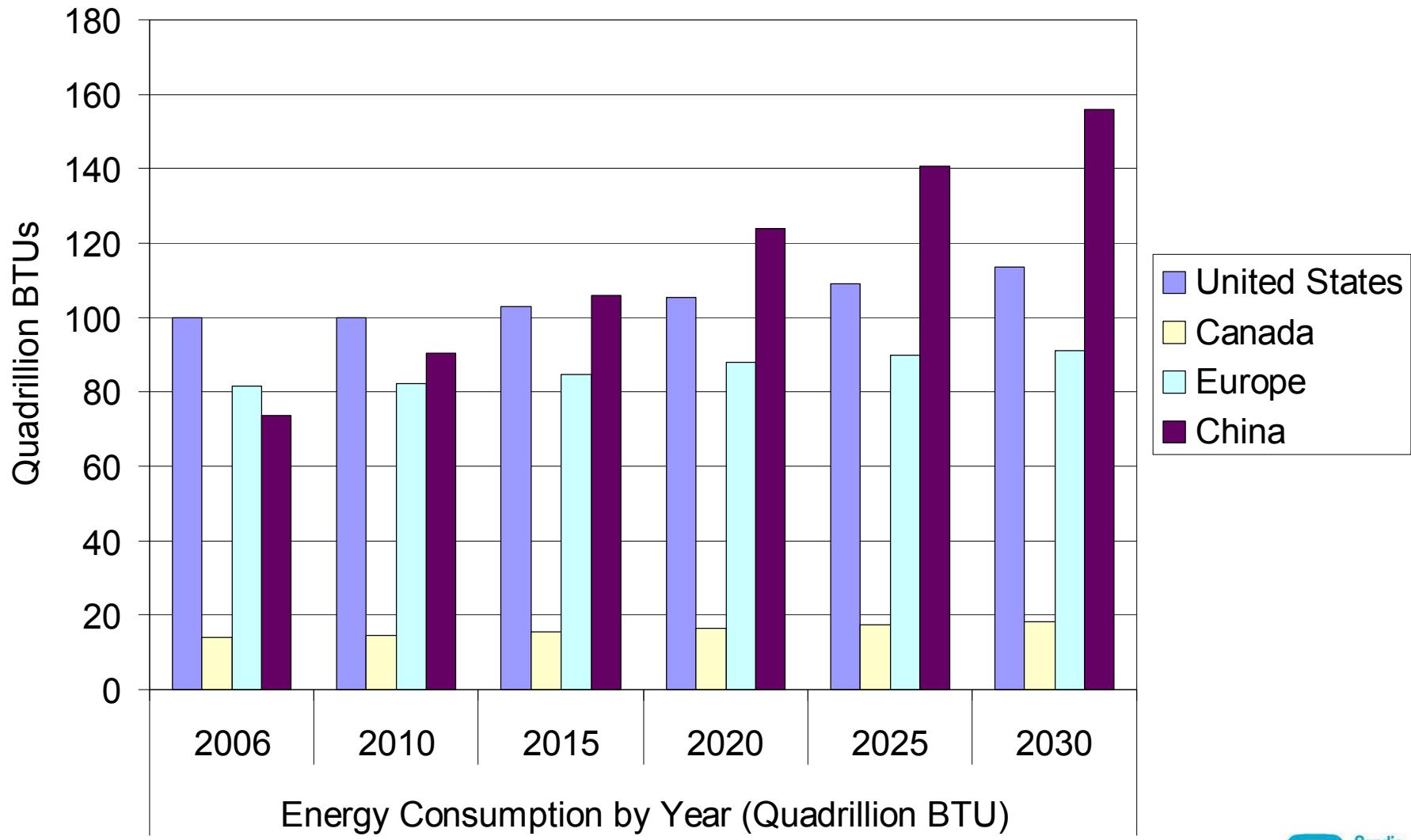
Rocketdyne FOA, ABENGOA,
SENER, Solar
Millennium FOA

Solar Thermochemical H₂

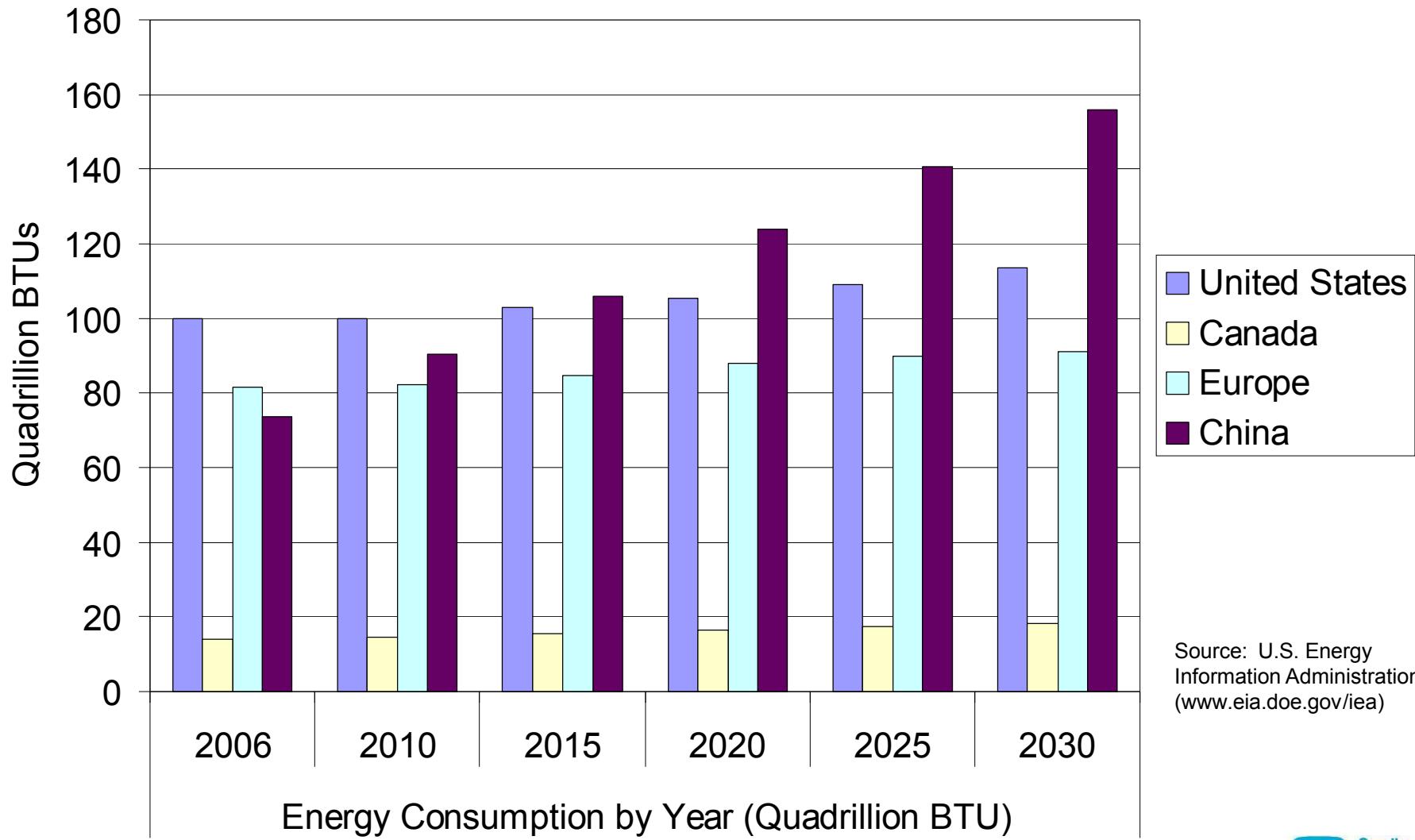
General Atomics

UNLV, NREL, CU, ANL

Make Visual Aids Clear



Can Use Animation with Excel Charts



Don't Overdo Animations

Parabolic Trough R&D

ALCOA FOA

SKYFUEL

FPL Energy

SUNRAY



ADV CSP Concept

Receiver Hamilton FOA

Bright Source

SKYFUEL FOA



Thermal Storage R&D

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Rocketdyne FOA, ABENGOA,
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Solar Thermochemical H₂

General Atomics

UNLV, NREL, CU, ANL



Use Transition and “Roadmap” Slides

Overview

- Introduction
- Approach
- Modeling Results
- Experimental Results
- Conclusions



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Summary



Summary

- **For both written and oral communication**
 - Design your presentation in terms of audience and purpose
 - Make important things stand out
 - State your information simply, clearly, and directly



Backup Slides



Keep it Simple

- **Start with the bigger picture and problem statement**
- **Avoid tiny details**
 - Listeners cannot keep track of many details
- **Make what you say concrete**
 - Use analogies for unfamiliar concepts