OSG Production Analysis: Goals, Status, and Plans
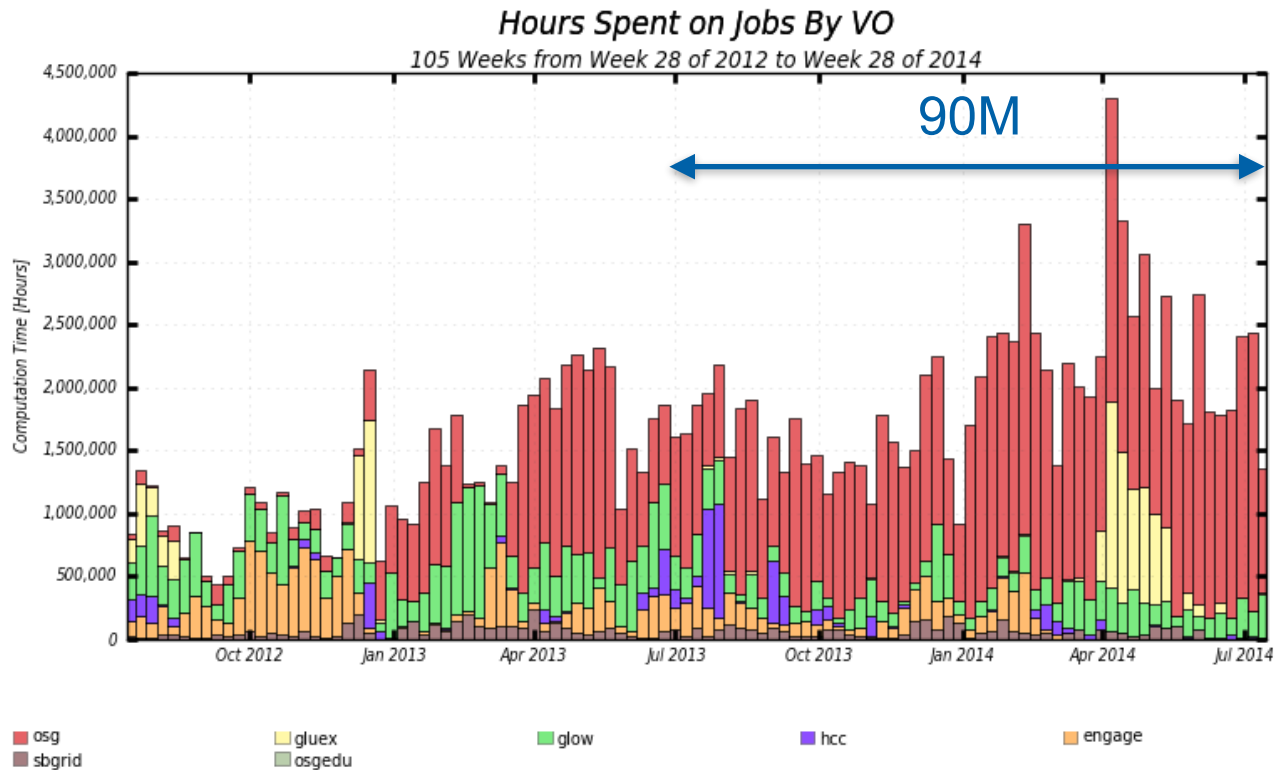
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Fermilab

OSG Council Meeting

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Introduction

- Opportunistic* VOs constitute ~90M hours over the past year
  - 63M from OSG VO alone
- Target growing to **100M hours** from OSG VO in **year 3**

Hours Spent on Jobs By VO
105 Weeks from Week 28 of 2012 to Week 28 of 2014

90M

Computation Time [Hours]

■ osg	□ gluex	■ glow	■ hcc	■ engage
■ sbgrid	■ osgedu			

Maximum: 4,301,975 Hours, Minimum: 443,446 Hours, Average: 1,633,068 Hours, Current: 1,362,837 Hours

*Opportunistic = osg, hcc, glow, engage, sbgrid, gluex

Increasing Opportunistic Cycles

1. Grow overall size of OSG
   - Rate of new sites approaching OSG is increasing
   - Existing ATLAS/CMS sites growing anticipating Run 2
2. Increase opportunistic share at existing sites
   - Are existing sites not providing all opportunistic hours they can
   - Are opportunistic jobs not configured to take advantage of existing resource
3. Eliminate inefficiencies in existing infrastructure
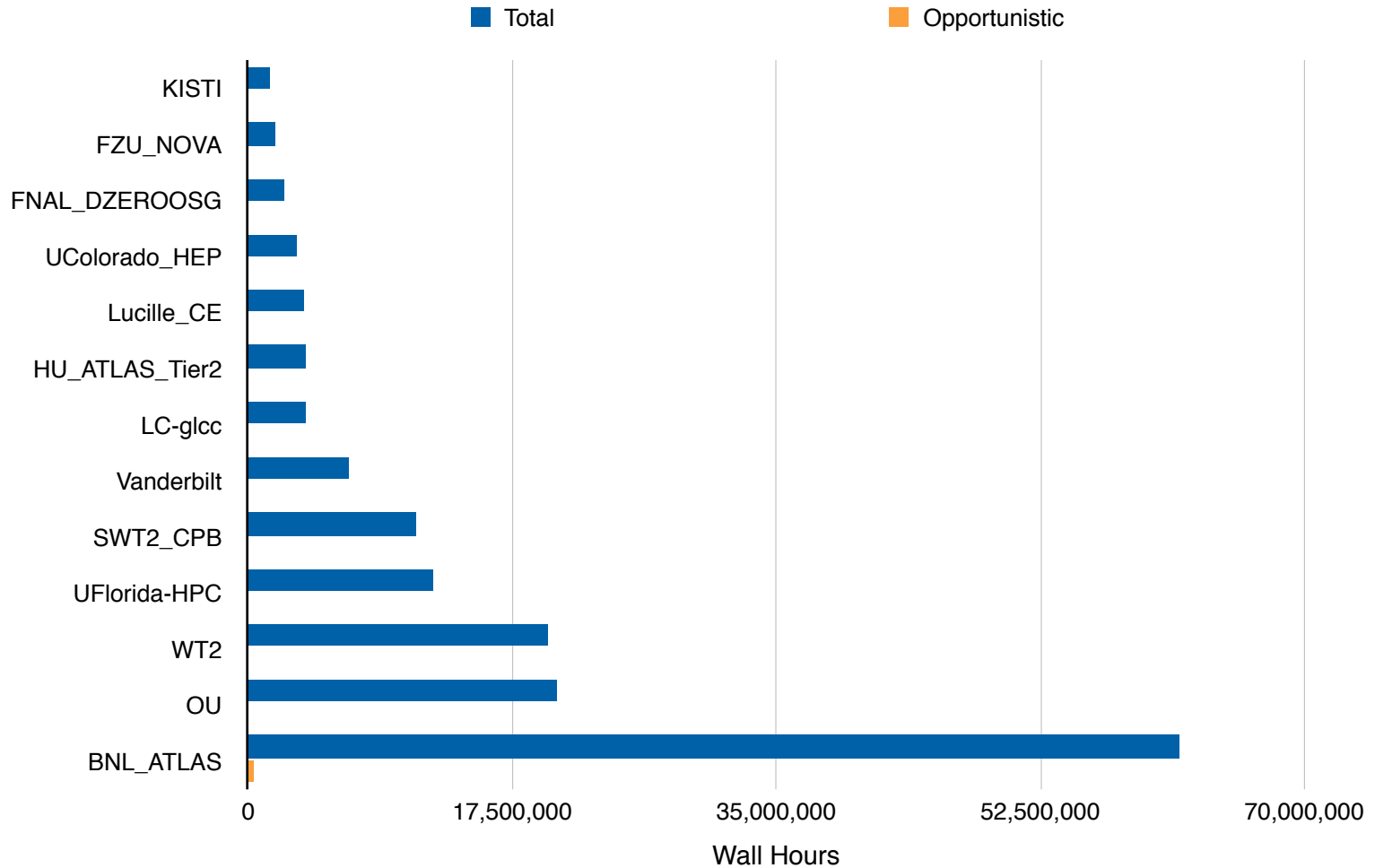   - e.g., at Factory-level

A top-down look
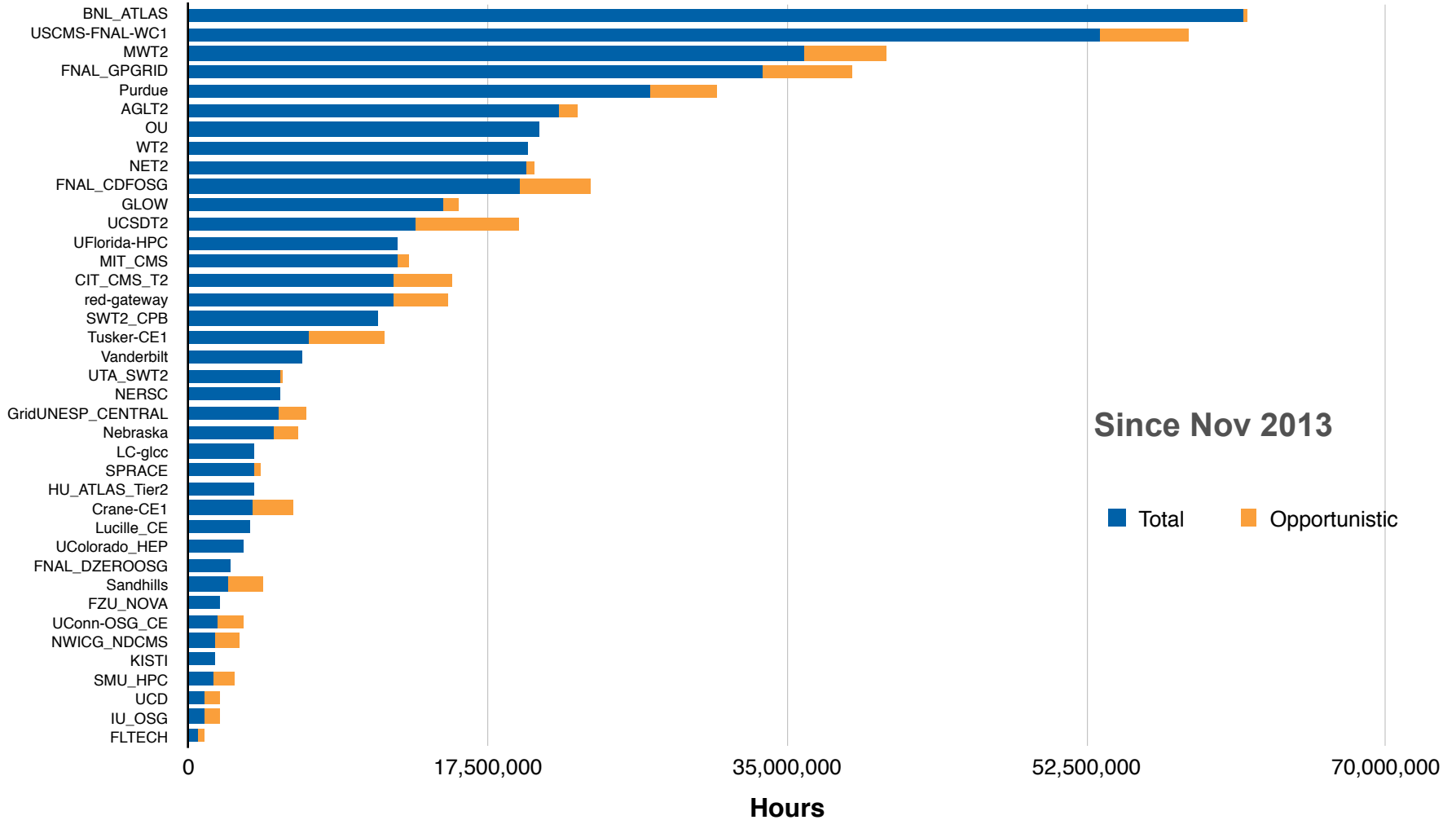
Categorizing sites

- Broadly break sites down into three categories

  1. Sites accepting OSG VO jobs "fully opportunistically"

  2. Sites accepting OSG VO jobs with a cap/quota

  3. Sites not accepting OSG VO jobs

- Metrics used to determine

  – Glidein monitoring per site

  – Correlations between opportunistic VOs and dominant VO for a site

"Type 1"

"Type 2"
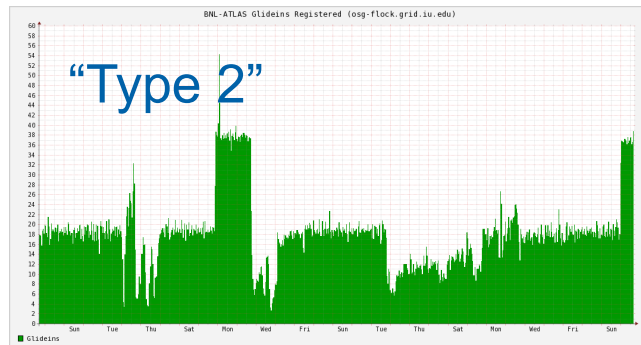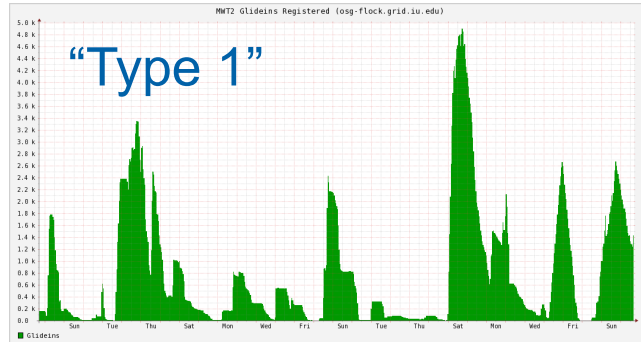
	cms	osg	engage
cms	1.00000	-0.83145	-0.68202
osg	-0.83145	1.00000	0.60380
engage	-0.68202	0.60380	1.00000

Sites with little opportunistic availability

Legend: ■ Total ■ Opportunistic

Chart — horizontal bar chart showing Wall Hours (x-axis from 0 to 70,000,000) for sites: KISTI, FZU_NOVA, FNAL_DZEROOSG, UColorado_HEP, Lucille_CE, HU_ATLAS_Tier2, LC-glcc, Vanderbilt, SWT2_CPB, UFlorida-HPC, WT2, OU, BNL_ATLAS.

Next steps

- Approach sites/organizations about providing more opportunistic cycles
    - e.g., productive presentation to US ATLAS computing on 7/9
    - Better communication of what our preferences are (e.g., occasional opportunistic fills better than small but constant quota)
- Understand how we can reconfigure to better take advantage of available resources
    - e.g., should there be a "short" job queue?

- *What role does the OSG council foresee playing in this process?*