

Empowering a Greener Tomorrow: The LESS Accord and its Energy Savings Drive

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Members of Greening of Streaming



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Membership
requirement:

NO
GREENWASHING!

Next Monthly Membership Meeting:
September 13, 2023 at 11.00 ET
www.greeningofstreaming.org



Working Groups

- WG 1: Lexicon
- WG 2: Outreach and Communications
- WG 3: Best Practices and Governance
- WG 4: Live Event Energy Measurement
- WG 5: Audio Streaming
- WG 6: Compression/Decompression
- WG 7: Energy as a KPI for Standards
- WG 8: Consumer Premises Equipment
- WG 9: Academic and Industry Group Liaison



LESS



The Projects

- **Intelligent Distribution Model *Shifting***
Can we better define when each of 3 distribution models (Unicast / P2P / Net Layer Multicast) is the most energy efficient, and implement decisioning to help CDNs seamlessly move among models based on energy efficiency, much the way a car shifts gears to optimize performance?
- **'Good Enough' Codec / Ladder Configuration**
Can we save energy through codec choices and optimisation and demonstrate real-world energy reduction while maintaining 'good enough' quality for audience consumption?
- **Energy 'Breadcrumb' Metadata Stamps (to drive energy aware workflows)**
Can we obtain useful energy information from streaming systems to intelligently determine workflow strategy based on 'energy context' and create a container / manifest layer control plane for such decisions?
- **Hardware and Infrastructure Optimisation**
Can we combine technologies such as optimised silicon, immersion cooling, relocation etc. to move existing workloads (encoding / caching) to different hardware environments to realise significant energy efficiencies?



Project 1: Intelligent Distribution Model Shifting

- Problem
 - Can we better define when each of 3 distribution models is the most energy efficient and implement decision-making to help CDNs seamlessly move among models?
 - Unicast
 - Peer-2-peer
 - Net layer multicast
- Goal
 - Construct workflows that include energy measurements for each distribution model
 - Understand what stage the operator should transition between each distribution model



Project 2:

“Good Enough” Codec

- Problem
 - Can we save energy through codec choices and optimization?
- Goal
 - Demonstrate real-world energy reduction while maintaining “good enough” quality for audience consumption



Project 3: Energy “Breadcrumbs” Metadata Stamps

- Problem
 - Can we obtain useful energy information from streaming systems to intelligently determine workflow strategy based on energy context?
- Goal
 - Create a container, or manifest, layer control plane for such energy context decisions.



Project 4:

Hardware and Infrastructure Optimization

- Problem
 - Can we combine technologies – optimized silicon, immersion cooling, relocation – to move existing workloads to different hardware environments to realize energy efficiencies?
- Goal
 - Understand the latest technology advancements and how they can reshape service deployment models at the hardware level.



The Timeline for LESS Accord

- June 2023 – 4 projects defined and groups formed
- September 2023 – present the projects and solicit industry support at IBC
- October 2023 – March 2024 – projects are being worked
- April 2024 – results of 4 projects expected to be announced
 - At NAB
 - Possibly also in Hollywood

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LOW ENERGY SUSTAINABLE STREAMING (LESS) ACCORD

Greening of Streaming's LESS Accord is seeking to focus the industry's engineering minds around energy efficiency as we scale streaming. We conducted several months of active outreach to the industry engineers earlier this year.

At this event we will talk for 10-15 mins on each of the resulting four work areas our members are exploring as part of the LESS Accord, and take an opportunity for further input from the industry audience as we refine and move those projects into action.

PROJECT INTRODUCTION

- FRIDAY SEPT 15TH
- ROOM E-105 @IBC
- 14.45 DOOR*
- SESSIONS 3PM-4PM - THEN RETIRE TO BEACH

WWW.GREENINGOFSTREAMING.ORG/LESS

**THIS IS A FREE EVENT, BUT REGISTRATION IS REQUIRED. ONLY 50 SPACES.
SESSIONS MAY BE RECORDED.*

