Steven L. Beshear
Governor

Leonard K. Peters
Secretary
Energy and Environment Cabinet

Commonwealth of Kentucky
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David L. Armstrong
Chairman

James W. Gardner
Vice Chairman

Daniel E. Logsdon Jr.
Commissioner

March 30, 2015

PARTIES OF RECORD

RE: Informal Conference for
Case Nos. 2014-00452 and 2014-453

Enclosed is a memorandum that has been filed in the record of the above-referenced case. Any comments regarding the content of this memorandum should be submitted to the Commission within seven days of receipt of this letter. Questions regarding this memorandum should be directed to Chris Whelan at (502) 782-2644.

Sincerely,

Jeff Derouen
Executive Director

Enclosure

INTRA-AGENCY MEMORANDUM

KENTUCKY PUBLIC SERVICE COMMISSION

TO: Case File 2014-00452
Case File 2014-00453

FROM: Chris Whelan, MCW Team Leader

DATE: March 30, 2015

RE: Kentucky Utilities Company and Louisville Gas and Electric Company Fuel Adjustment Clause

On March 26, 2015, Commission Staff ("Staff") held an informal conference ("IC") with Kentucky Utilities Company and Louisville Gas and Electric Company (jointly "the Companies"). Notice of the IC was issued on March 25, 2015. The Companies requested the IC to discuss their After-the-Fact Billing ("AFB") process. A list of attendees is attached to this memorandum.

The Companies made a presentation regarding the AFB process and walked Staff through examples using hourly data. (The presentation is attached to this memorandum). The Companies stated that the term "Min Block" as used in the presentation refers to the quantity of generation that is automatically assigned to native load and it is slightly less than the minimum output level of the unit. The Companies stated that each hour the Min Block MWs are assigned to native load and are always less than native load but that their combustion turbines do not have minimum blocks for AFB purposes. When asked about Cane Run unit 7, which is under construction, the Companies stated that it would likely have a Min Block.

According to the Companies, the purpose of the AFB is 1) to determine the amount of costs assigned to off-system sales and thus excluded from fuel cost recovery and 2) to determine fuel savings when the Companies sell power to each other. The Companies explained that when they determine economic dispatch, they take into account consumables for environmental controls and the cost of emission allowances but only fuel costs are used in the calculation of the FAC. They also stated that the next MW is always more expensive than the current MW.

The Companies agreed to provide a copy of the hourly data examples in Excel spreadsheet format, subject to a motion for confidentiality. There being nothing further to discuss, the meeting was adjourned

Attachment 1: Sign-In Sheet
Attachment 2: Presentation

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

AN EXAMINATION OF THE APPLICATION OF THE FUEL ADJUSTMENT CLAUSE OF KENTUCKY UTILITIES COMPANY FROM NOVEMBER 1, 2012 THROUGH OCTOBER 31, 2014	))))	CASE NO. 2014-00452
AN EXAMINATION OF THE APPLICATION OF THE FUEL ADJUSTMENT CLAUSE OF LOUISVILLE GAS & ELECTRIC COMPANY FROM NOVEMBER 1, 2012 THROUGH OCTOBER 31, 2014	))))	CASE NO. 2014-00453

March 26, 2015

Please sign in:

NAME	REPRESENTING
Jonathan Bayer	PSC
Allyson Sturgeon	LG&E / KU
Joe Barnes	LG&E / KU
Chuck Schram	LG&E/KU
Stuart Wilson	LG&E/KU
Chris Whelan	PSC - FA
Mary Whitaker	PSC-FA
J.E.B. Pinney	PSC - OGC
~~Robert~~ M. Conroy	LG&E/KU
Matthew Barr	PSC

Quang D. Nguyen	PSC

PPL companies

After-the-Fact Billing Process

March 26, 2015

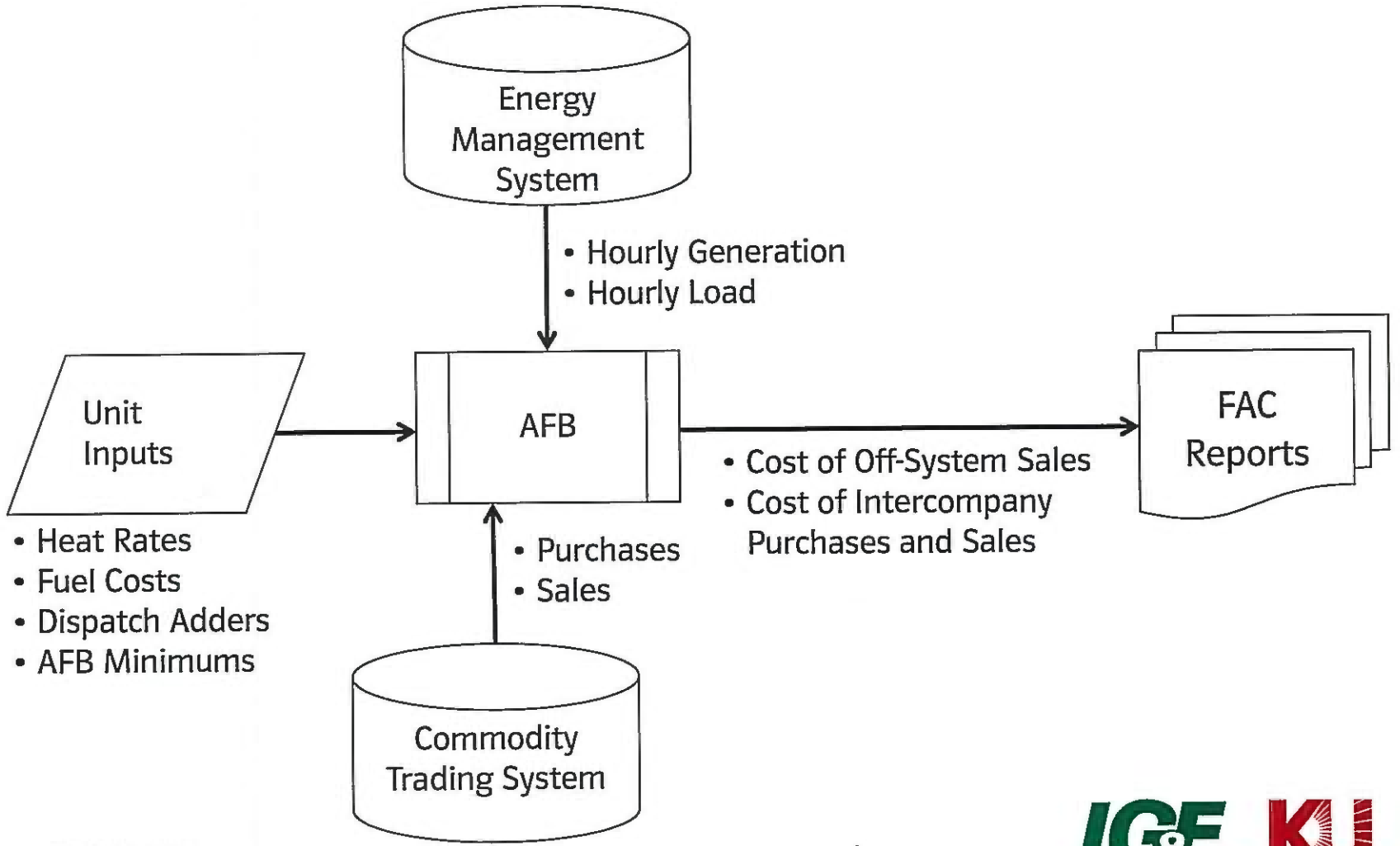
History – After-the-Fact Billing (AFB)

- Computer program developed in 1998 at the time of LG&E/KU merger
  - Developed to implement the provisions of the Power Supply System Agreement
  - Joint Dispatch of the Generation Systems
  - Split savings for Intra-Company Transaction
  - Identification of highest cost for off-system sales
- Detailed discussion of AFB in Case Nos. 2000-00497-A and 2000-00498-A
  - Hearing on September 4, 2001 requested detailed data for three selected hours
  - Detailed data provided on September 25, 2001
  - Informal conference held with Commission staff and KIUC on October 31, 2001 at LG&E/KU offices
- AFB has operated the same since the LG&E/KU merger

After-the-Fact Billing (AFB) Overview

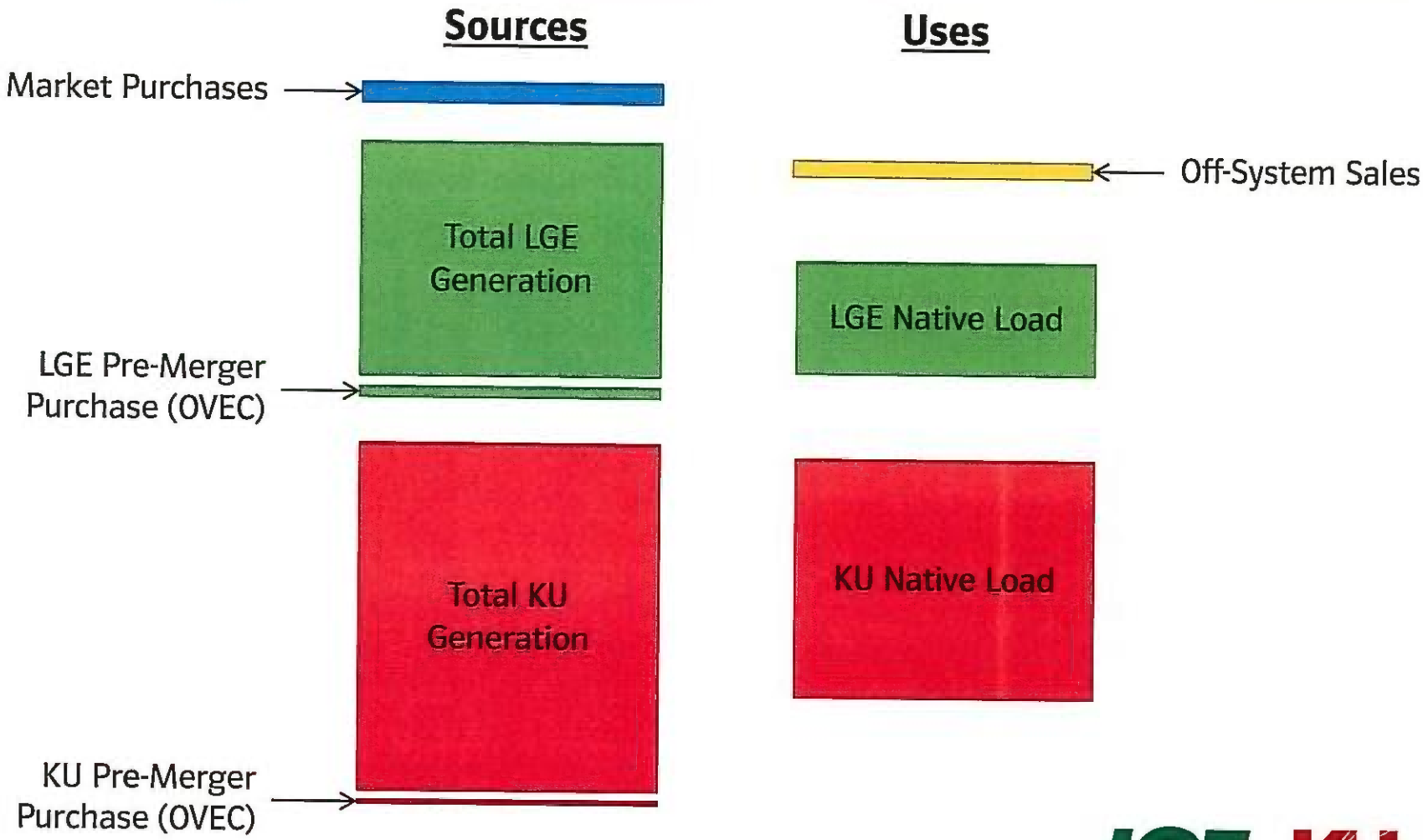
- On first business day of each month, AFB process is performed for prior expense month
  - Processes hourly data one hour at a time
  - Stack all sources, both generation and purchase, from lowest incremental cost to highest on a MW by MW basis
  - Lowest owned generation serves own native load
  - Min Blocks of coal units stack to native load
- AFB provides basis for inputs on FAC Form A for each expense month
  - Intercompany transactions
  - Fuel cost assigned to Off-system sales for FAC exclusion

AFB Process Flowchart

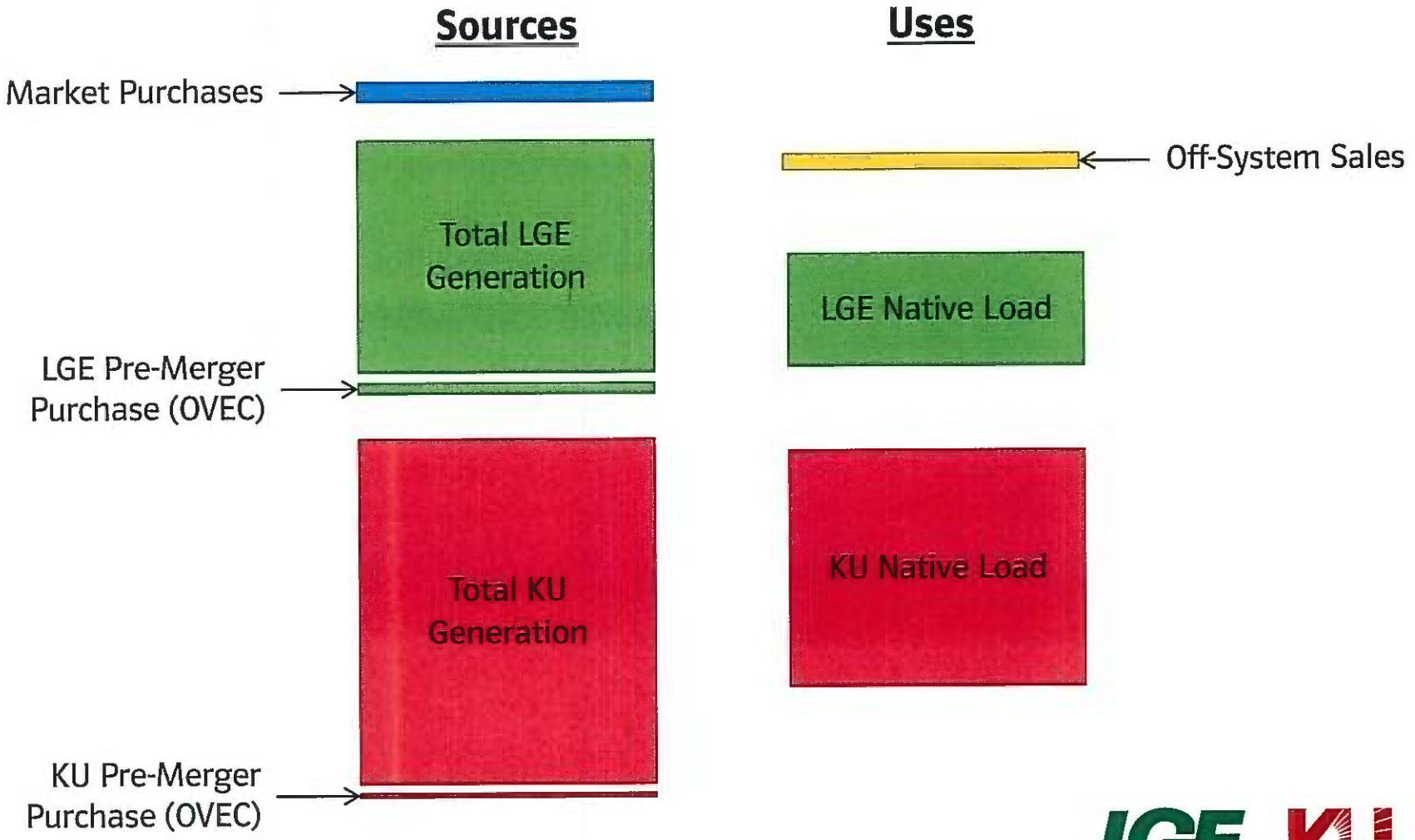


PPL companies

AFB Sources and Uses



LG&E and KU jointly dispatch their generating units to serve load



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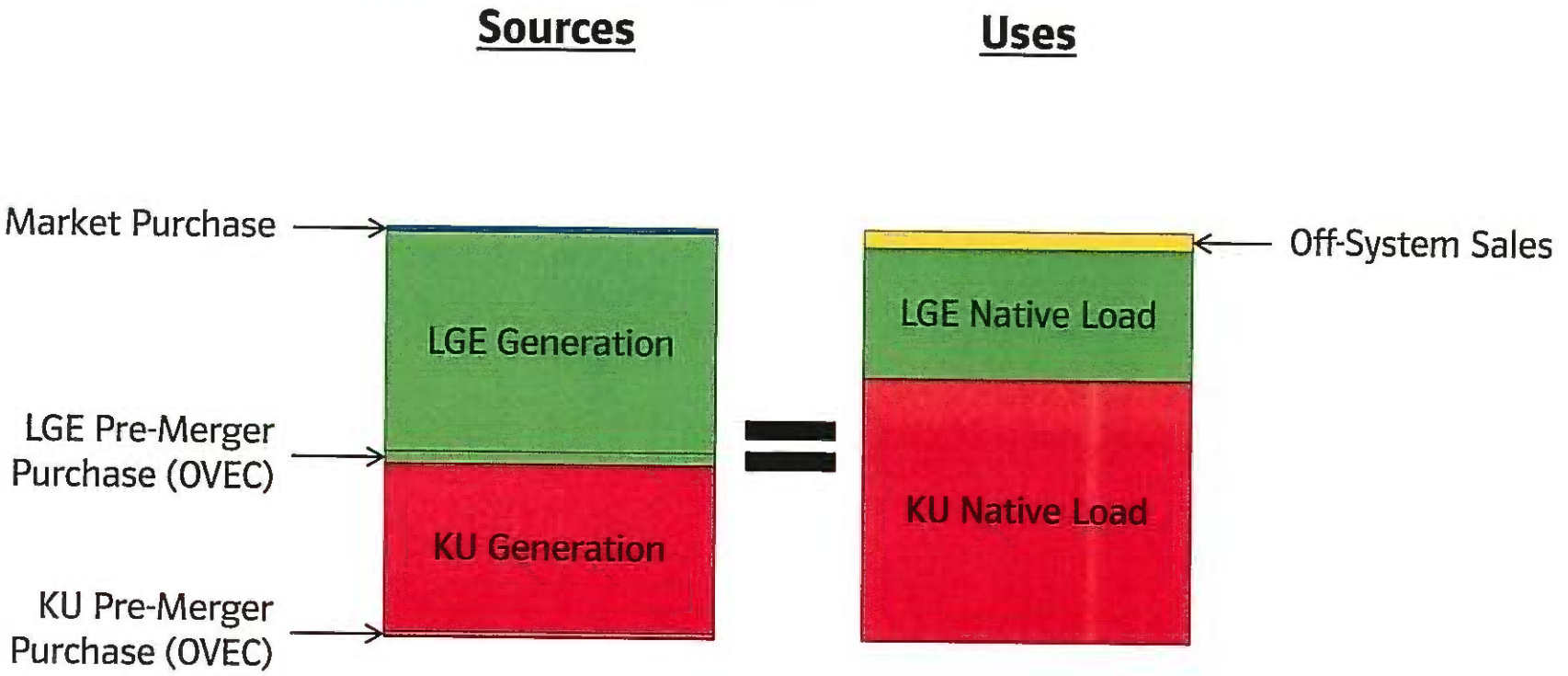
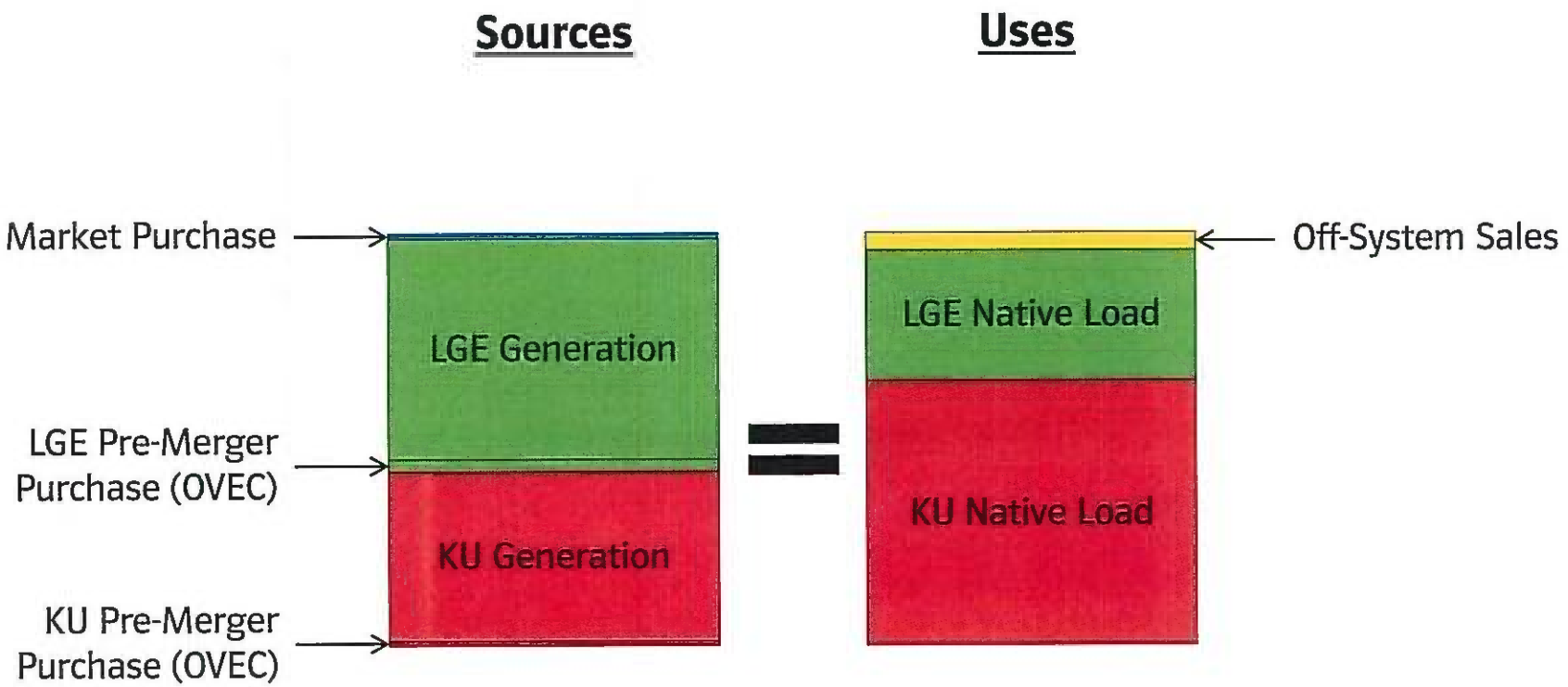
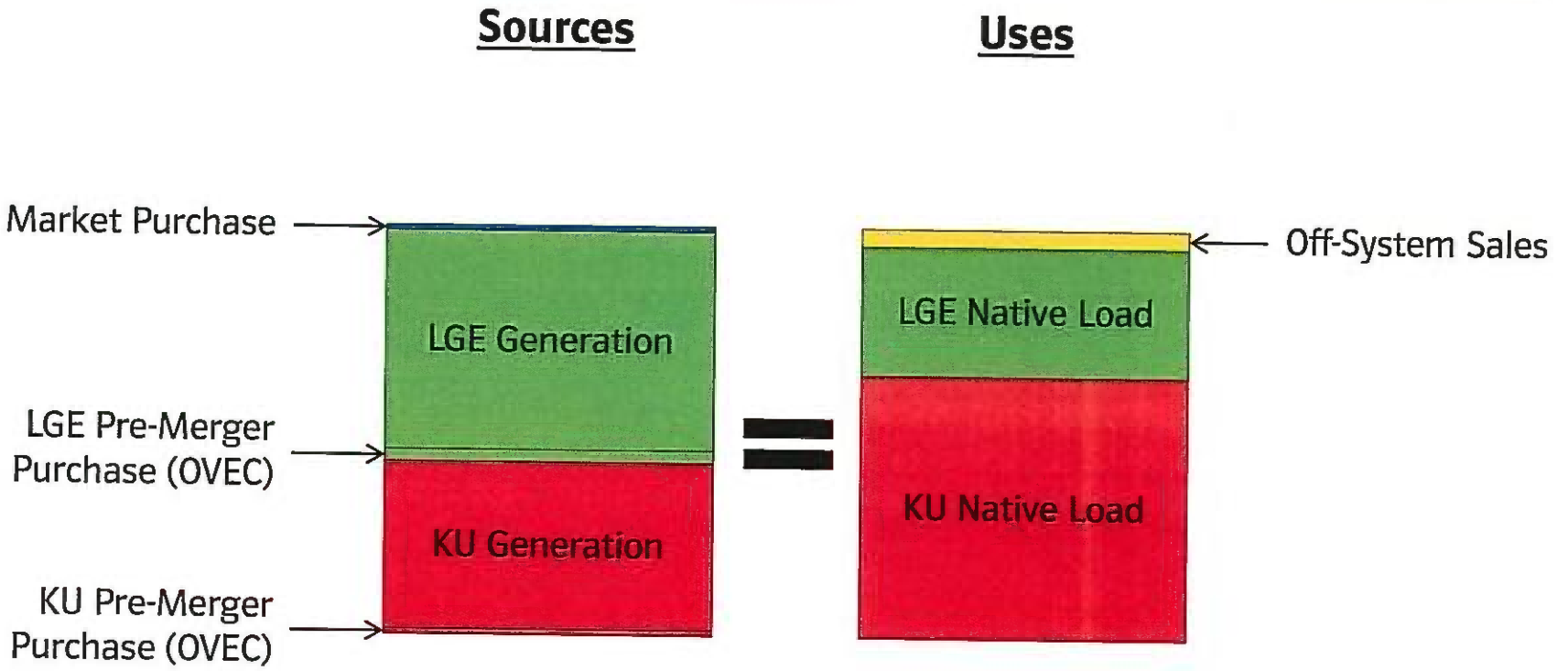


AFB assigns LGE/KU source MWs to LGE/KU uses



Part 1: Assign premerger purchases and AFB Min Blocks to each company's native load



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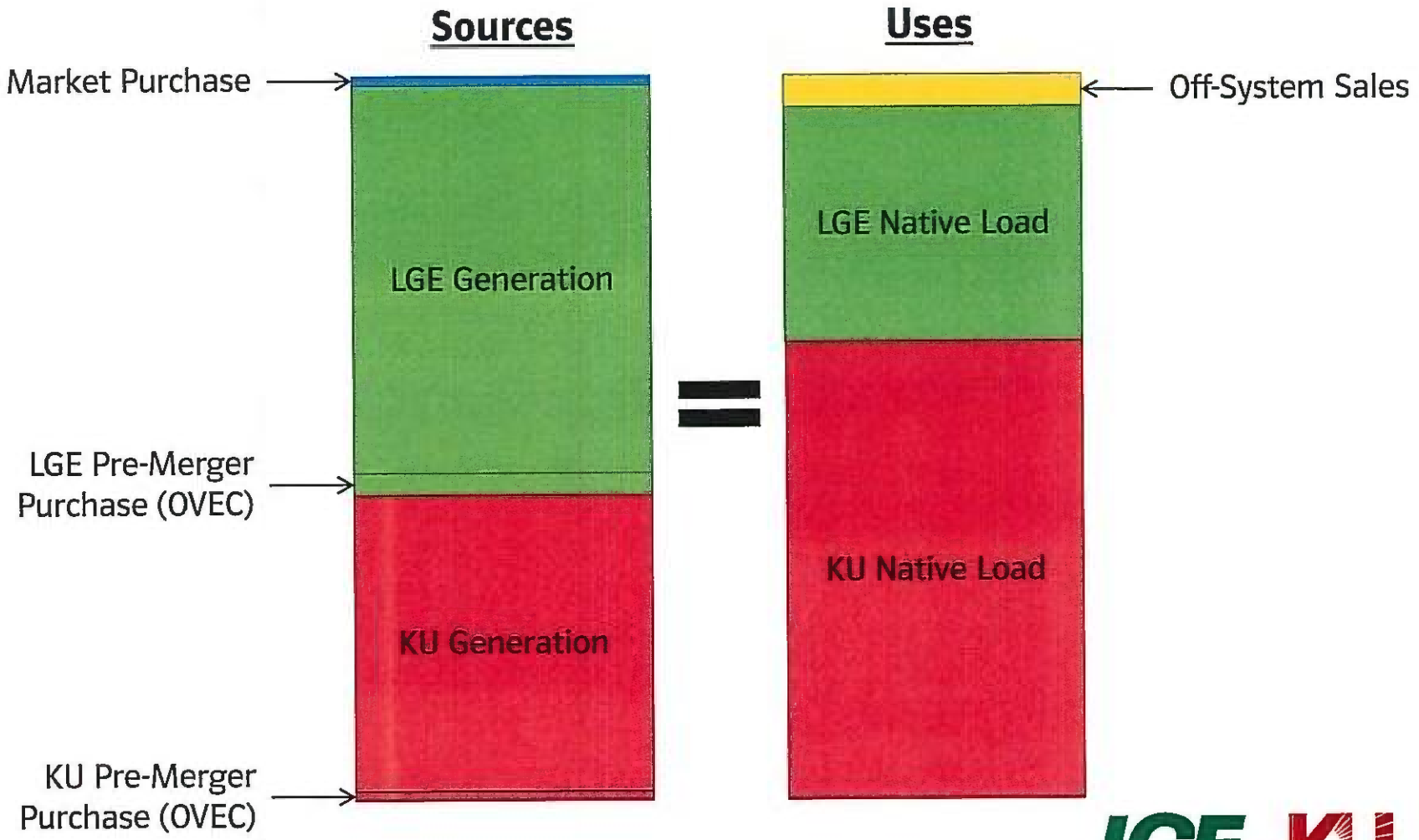

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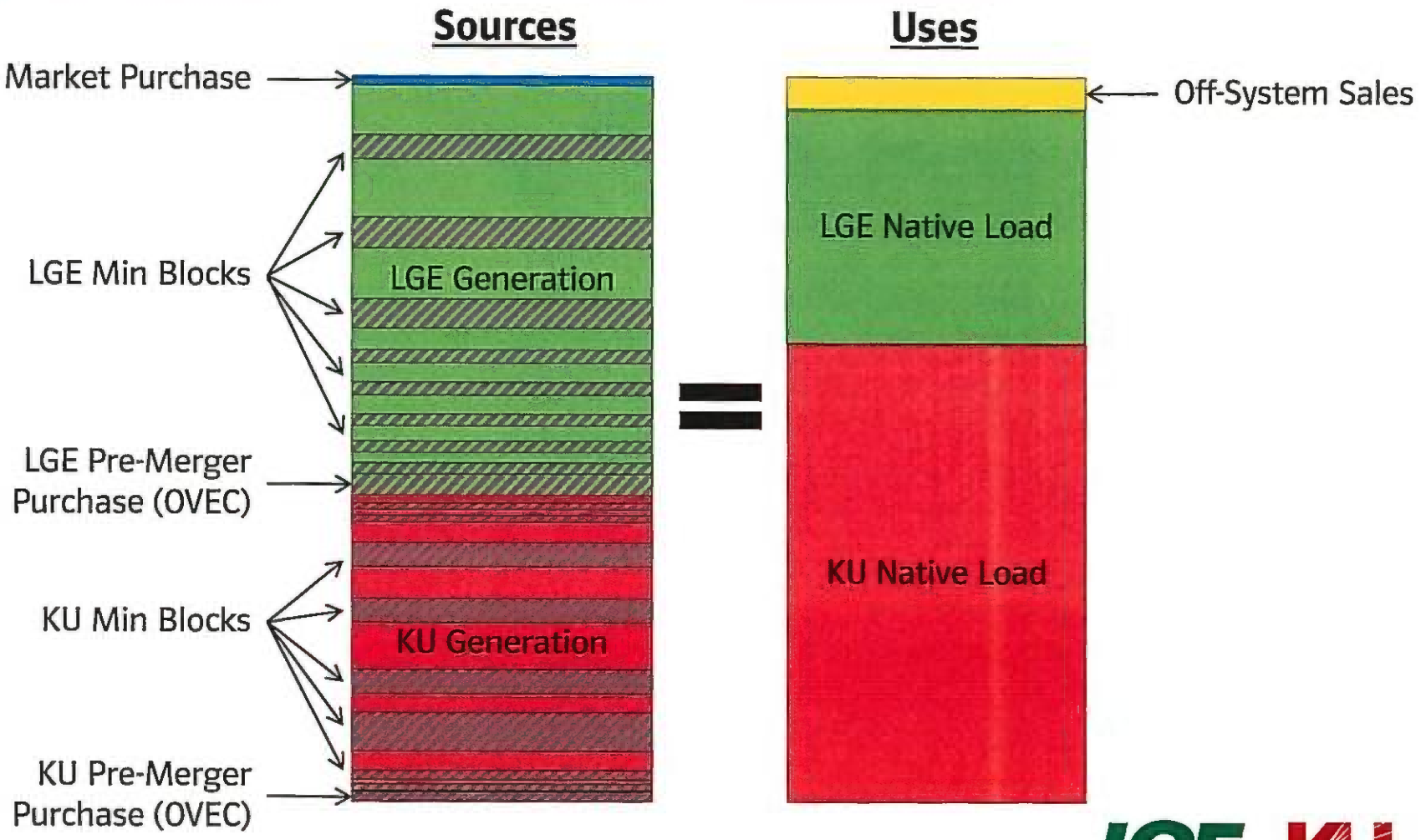

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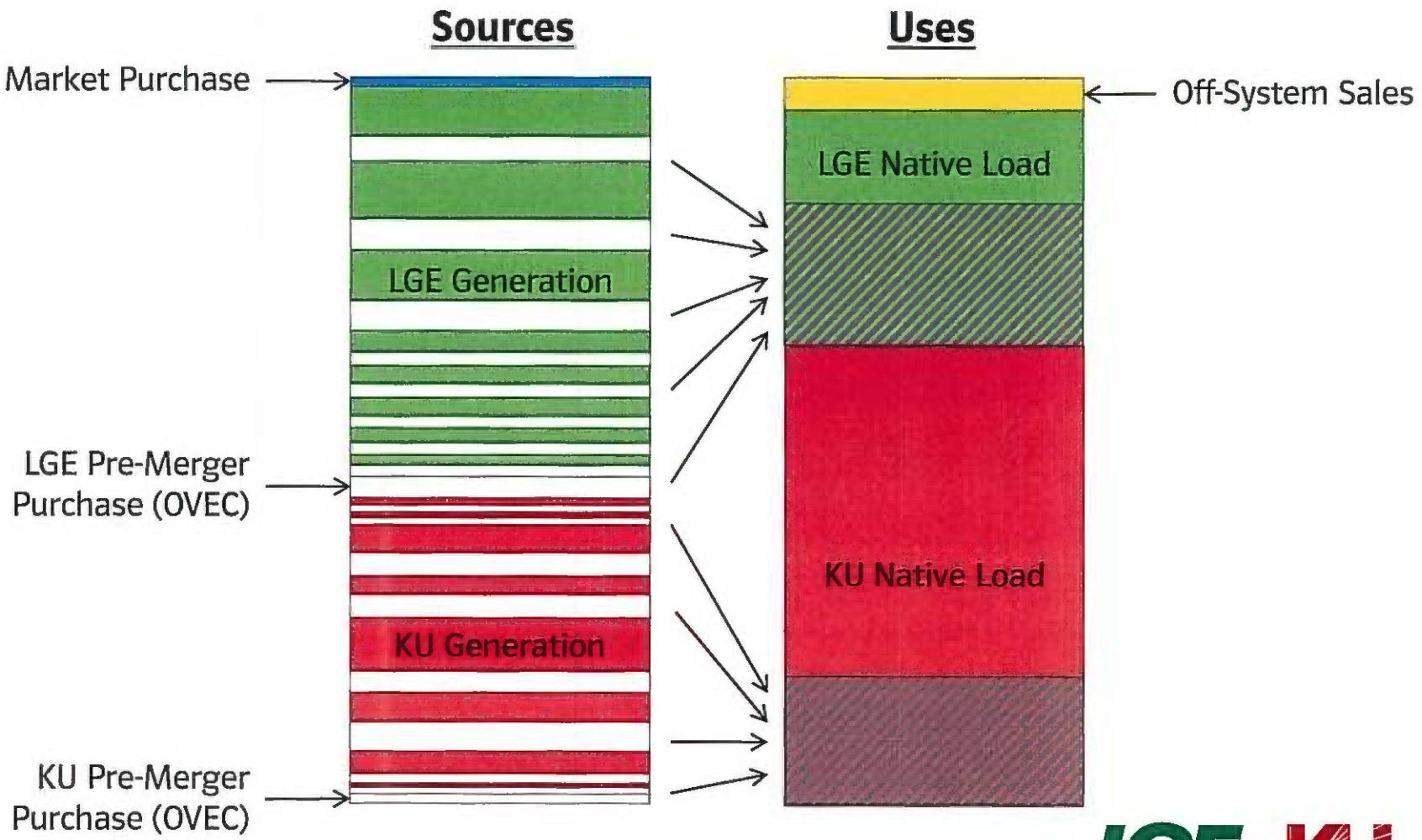

PPL companies

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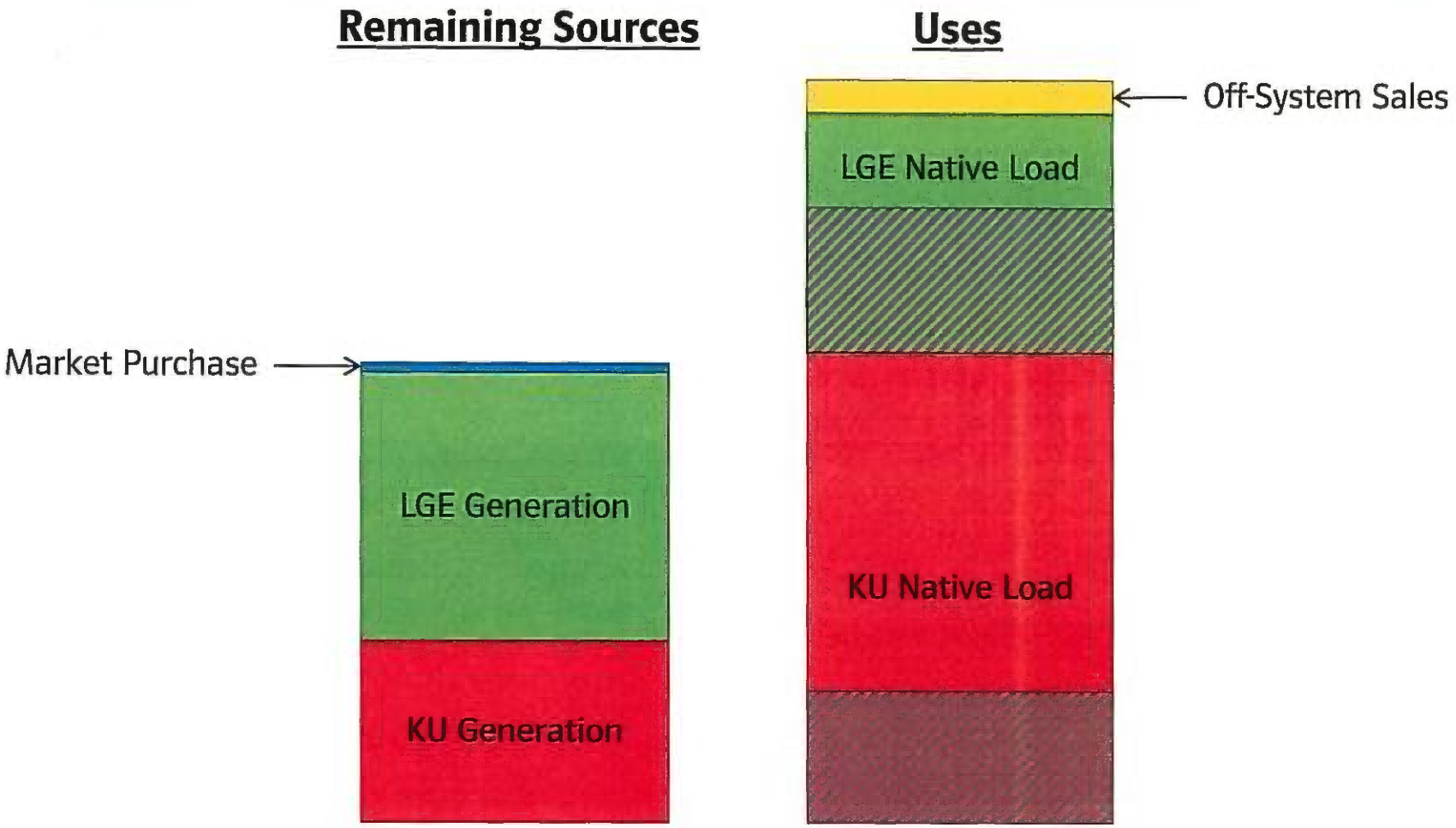

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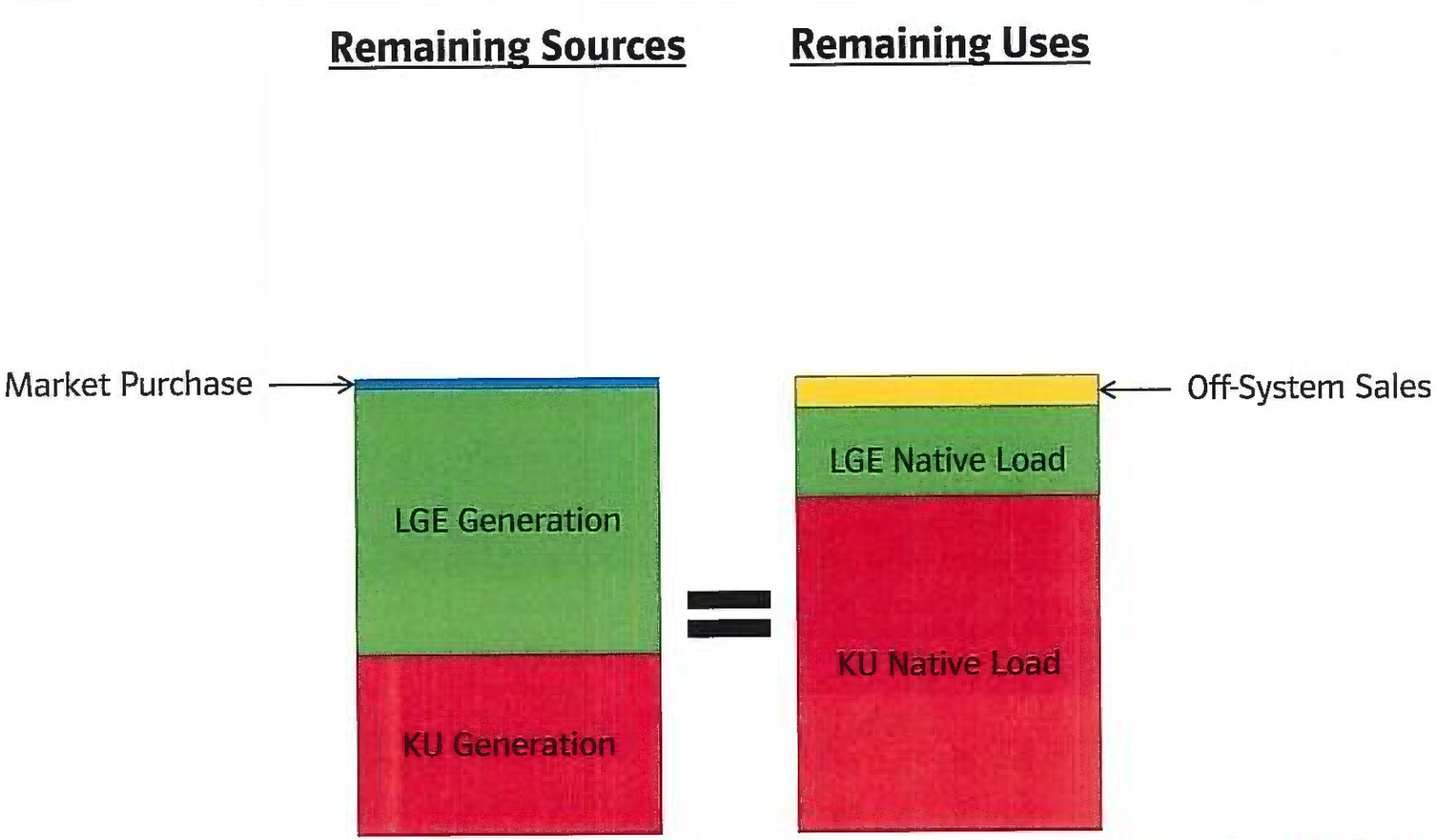
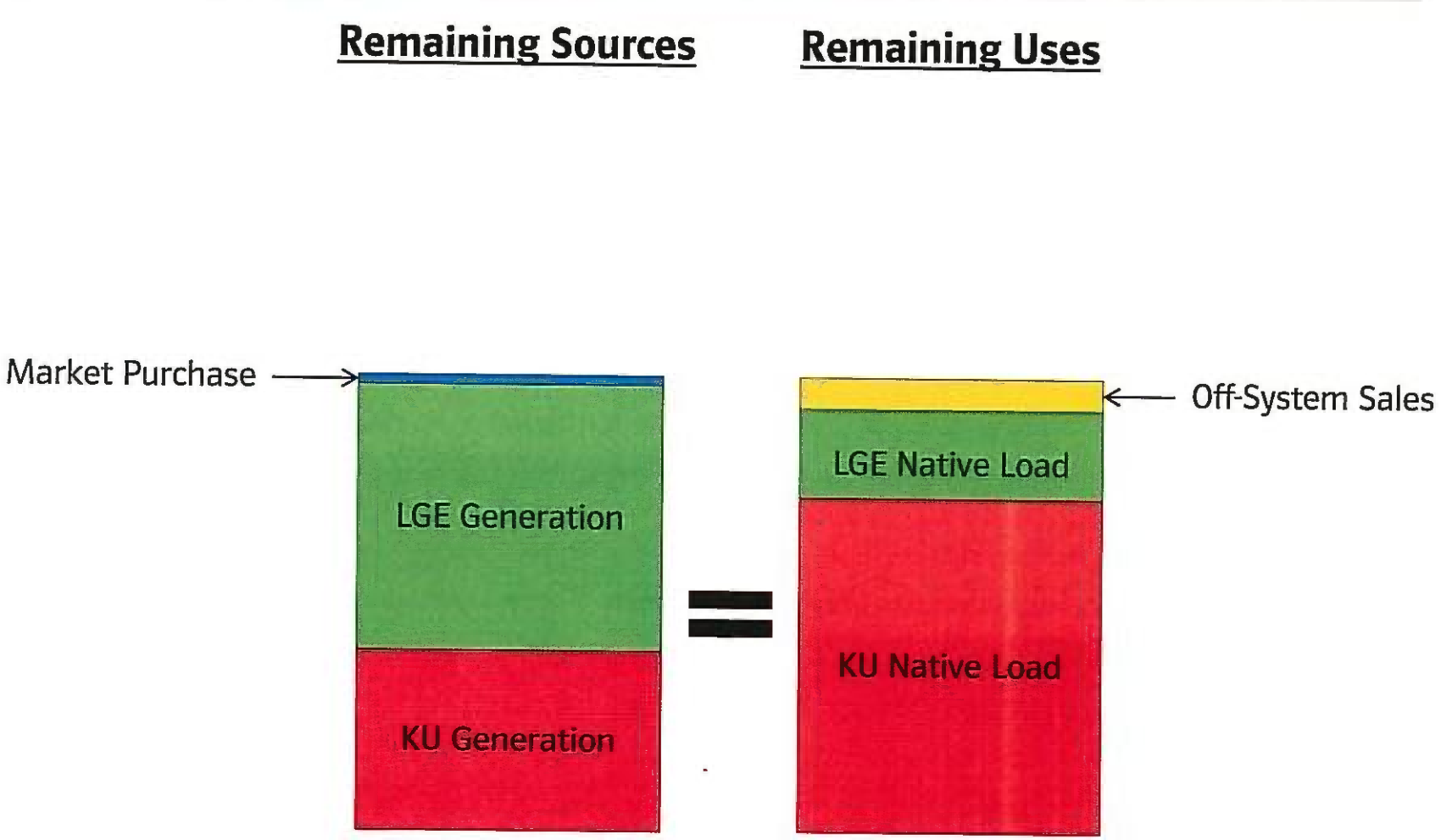


Part 2: Assign remaining sources to OSS, KU native load, or LGE native load based on incremental cost and ownership

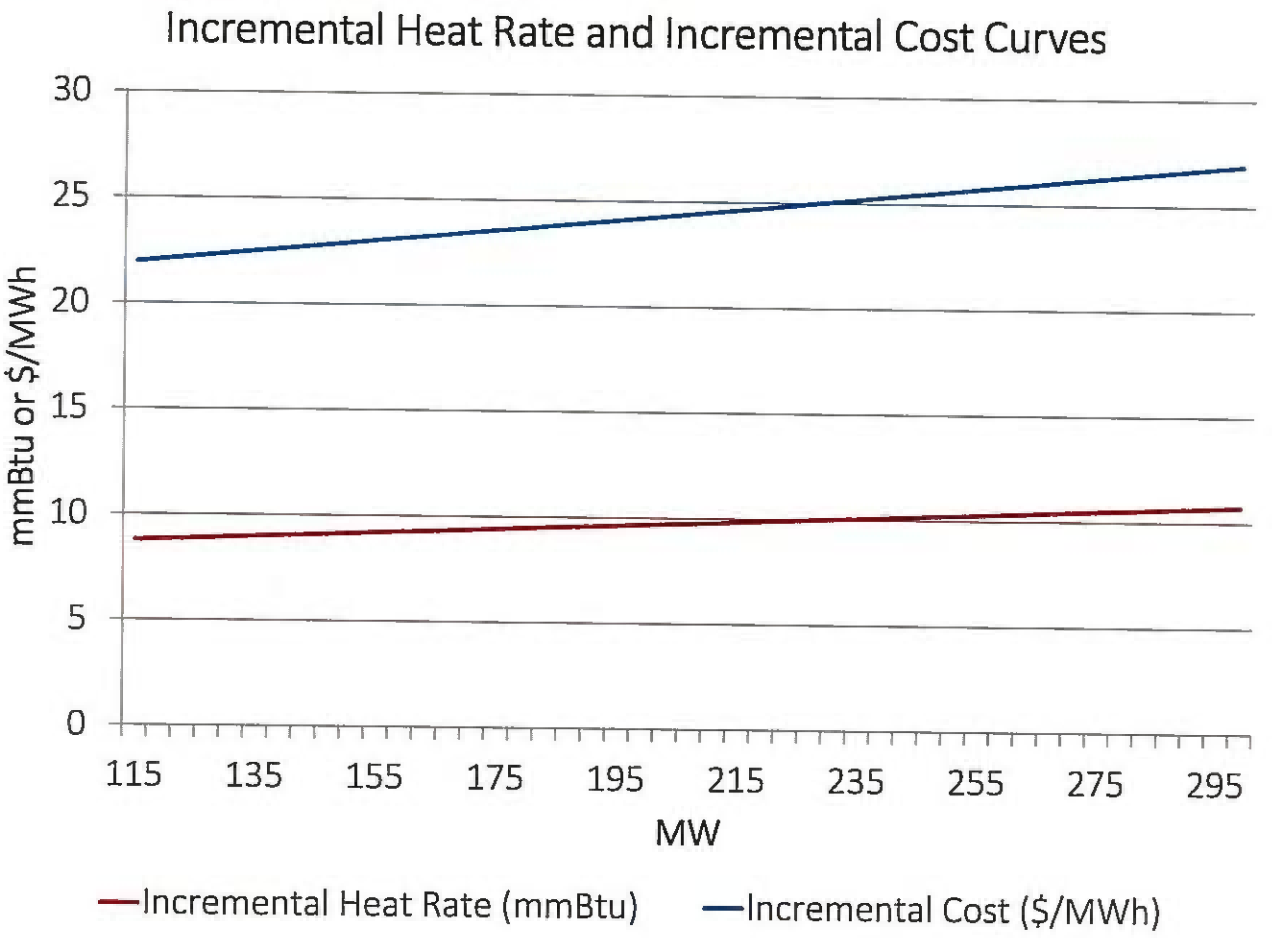


PPL companies

Incremental Cost Calculation

- Heat $Rate_{MW} = a_2 * MW^2 + a_1 * MW + a_0$
- Incremental Heat $Rate_{MW} = 2 * a_2 * MW + a_1$
- Incremental cost (IC):
  - IC_{MW} = Incremental Heat $Rate_{MW}$ * (Fuel Cost + Dispatch Adder)
- Fuel Costs and Dispatch Adders
  - For coal units, cost of fuel is coal inventory cost
  - For gas units, cost for fuel is average daily gas cost
  - Dispatch adders include consumables for environmental controls and the cost of emission allowances

Incremental cost increases over generation output range



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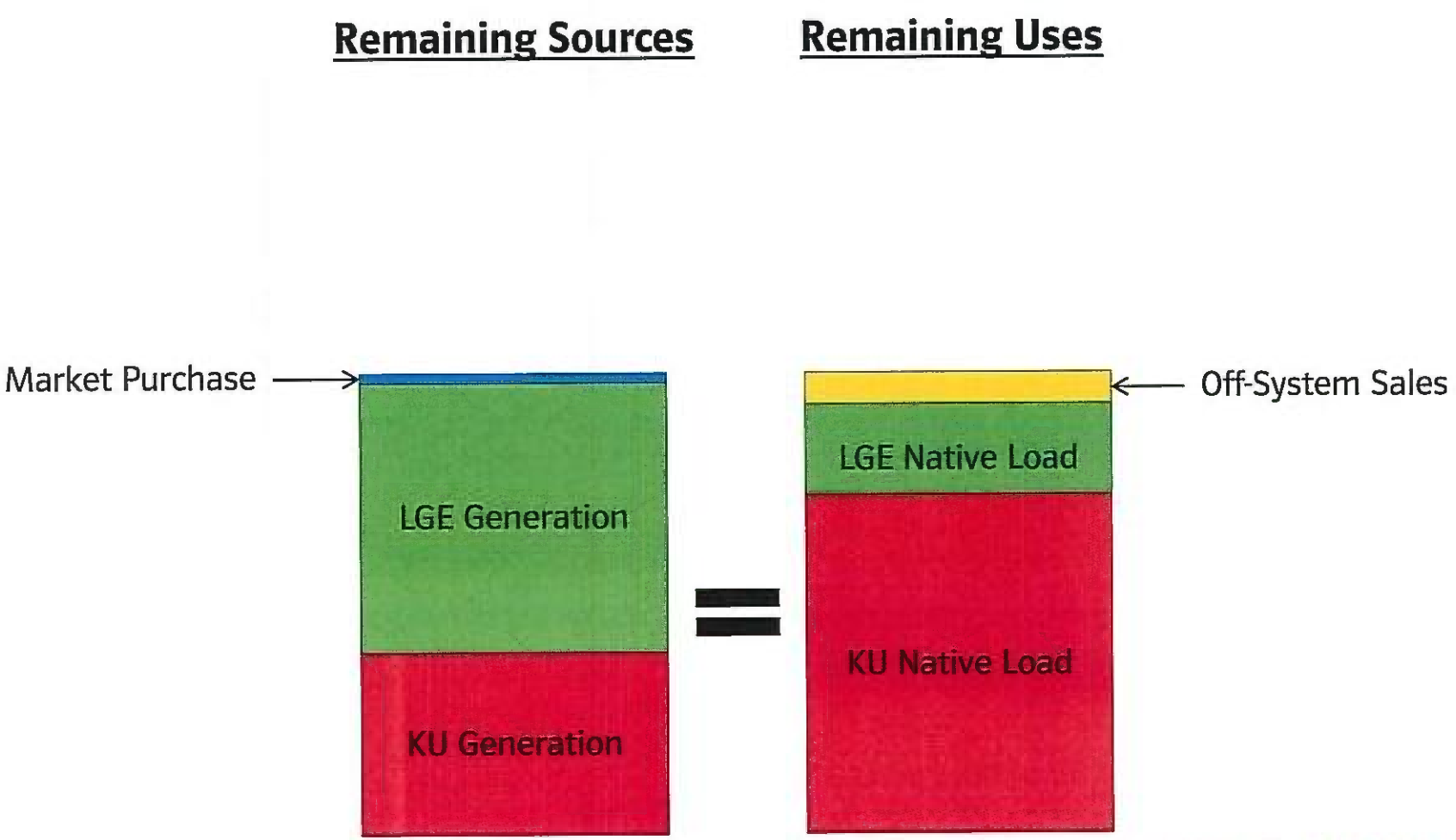

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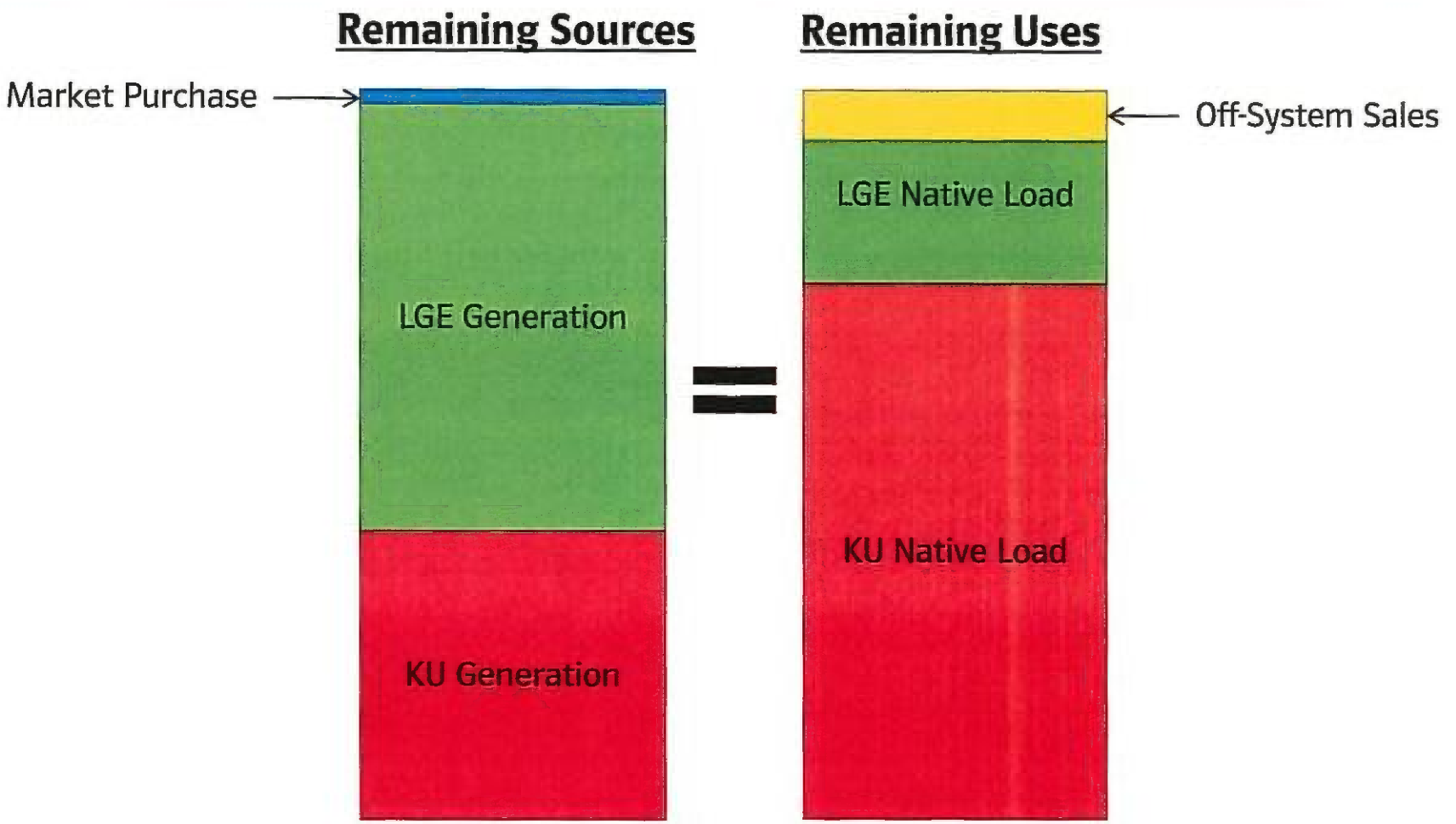
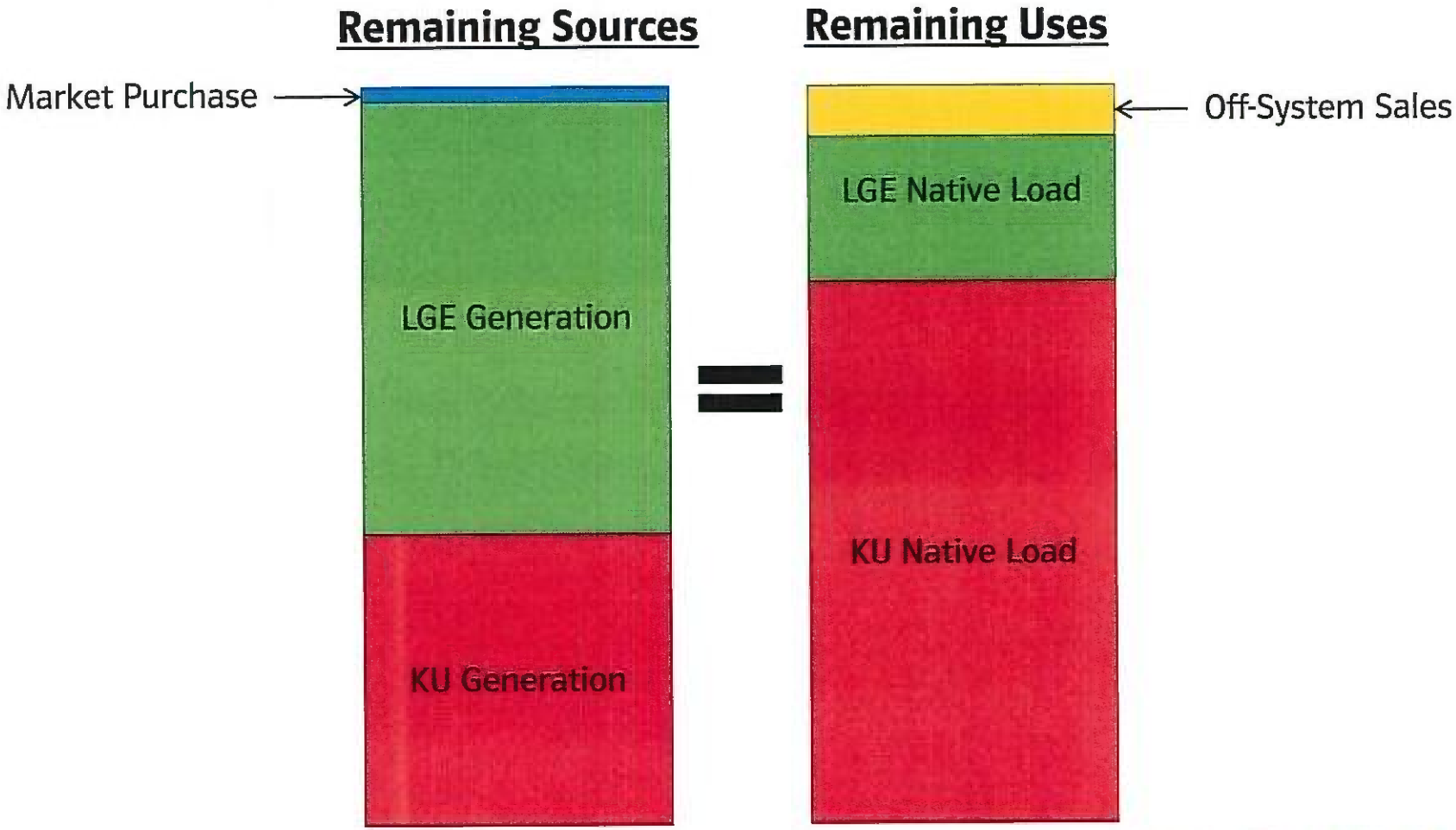


PPL companies

Step 1: Sort sources by incremental cost



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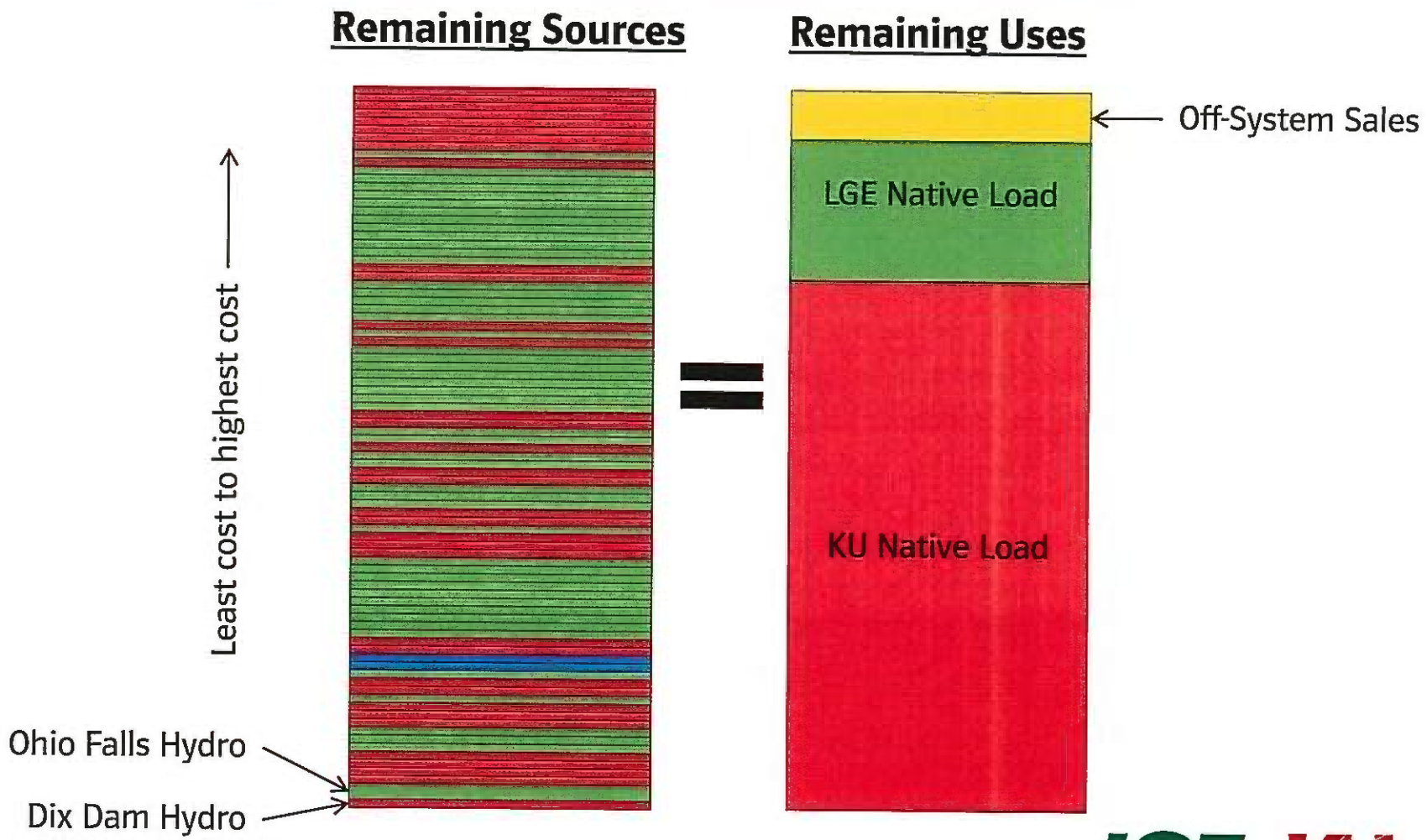
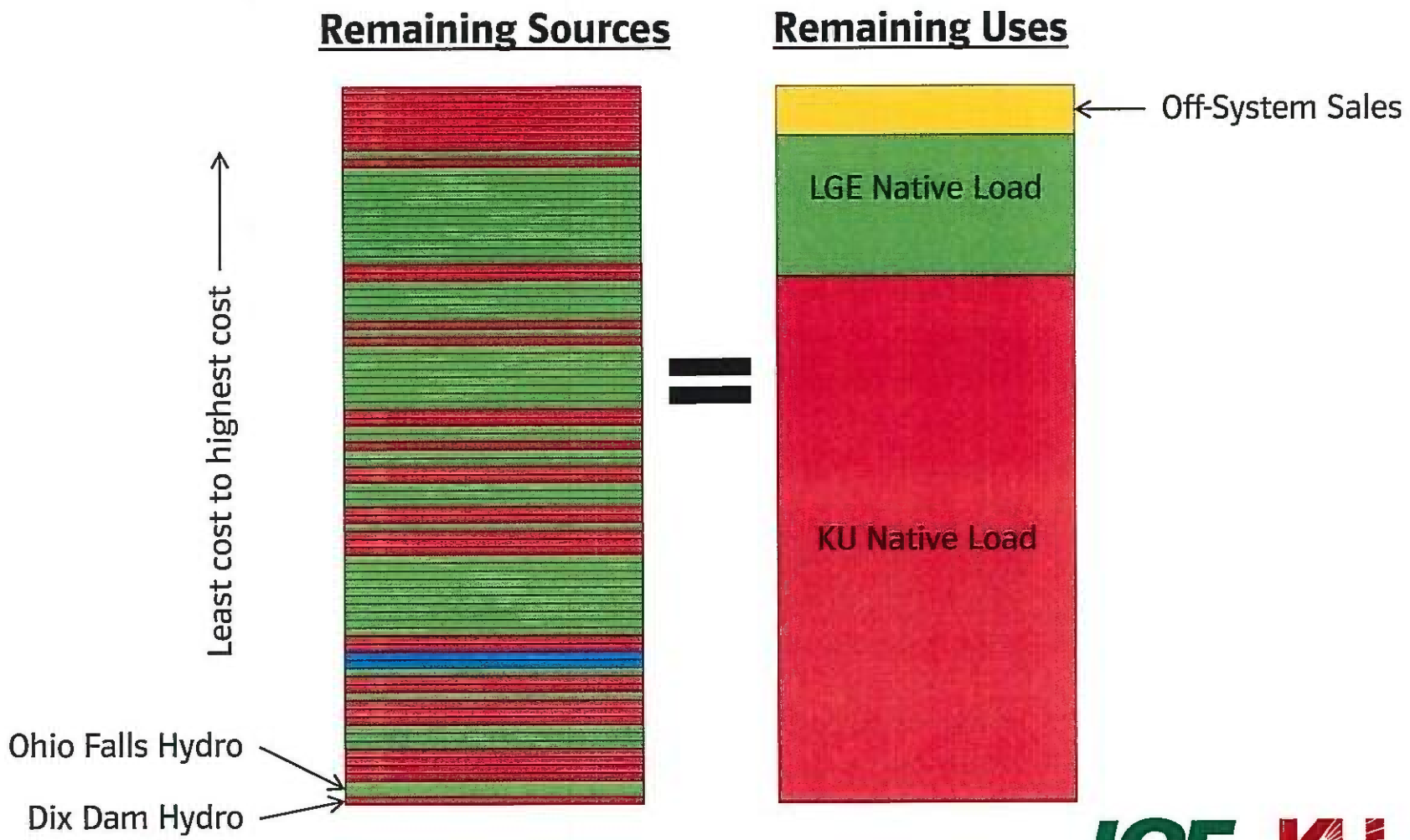


PPL companies

Step 2: Assign each company's MWs to its native load until one company's native load is fully served



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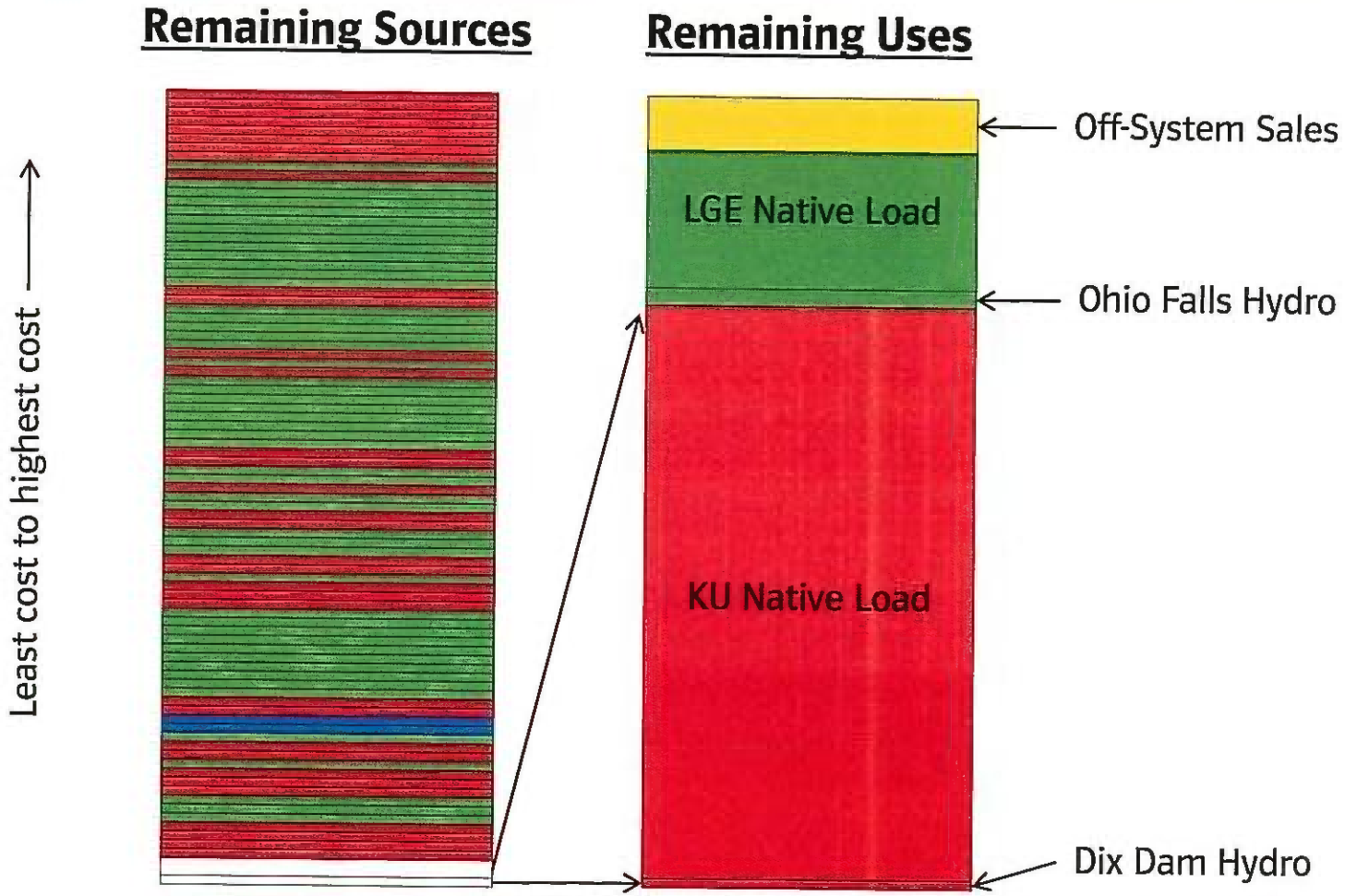

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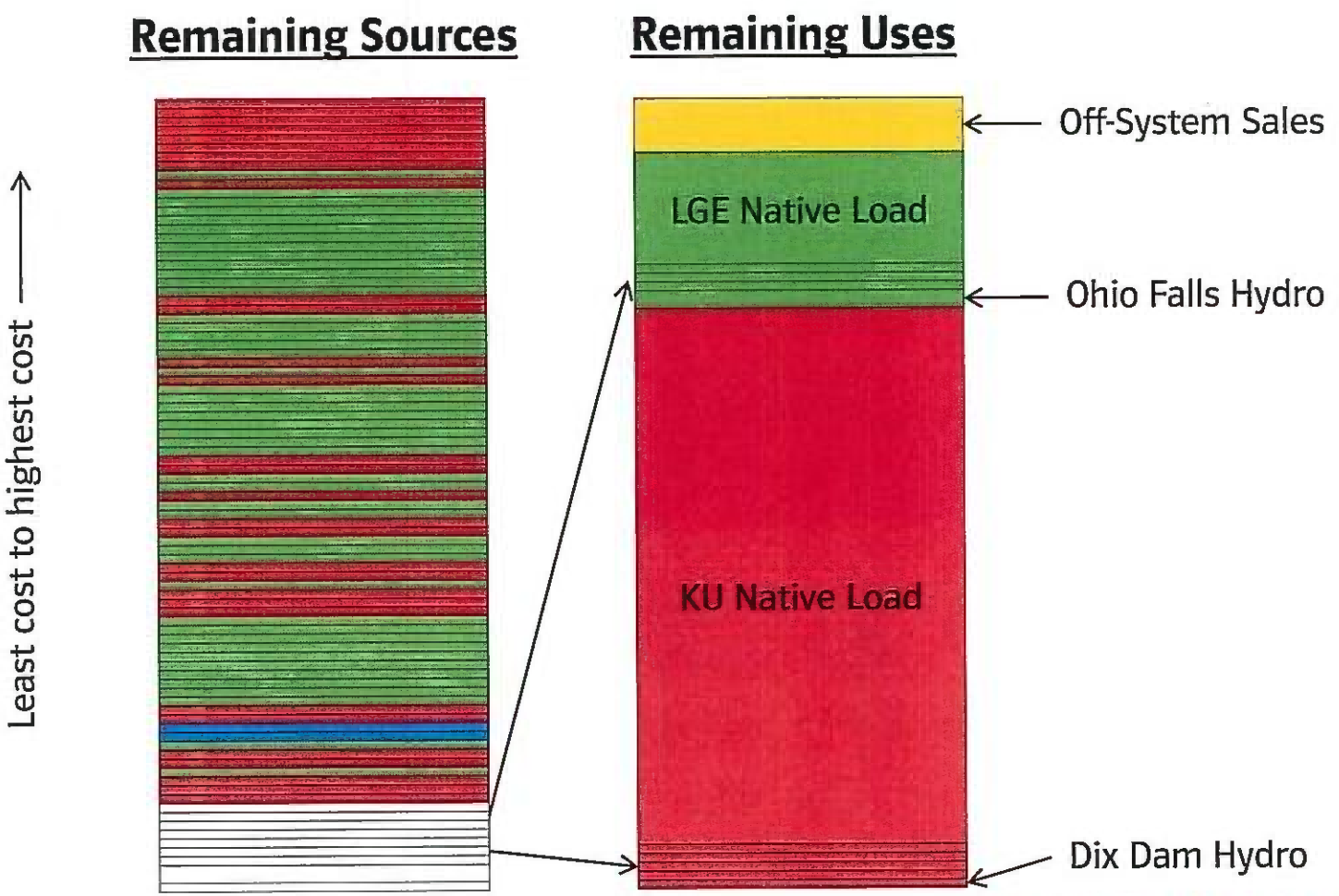

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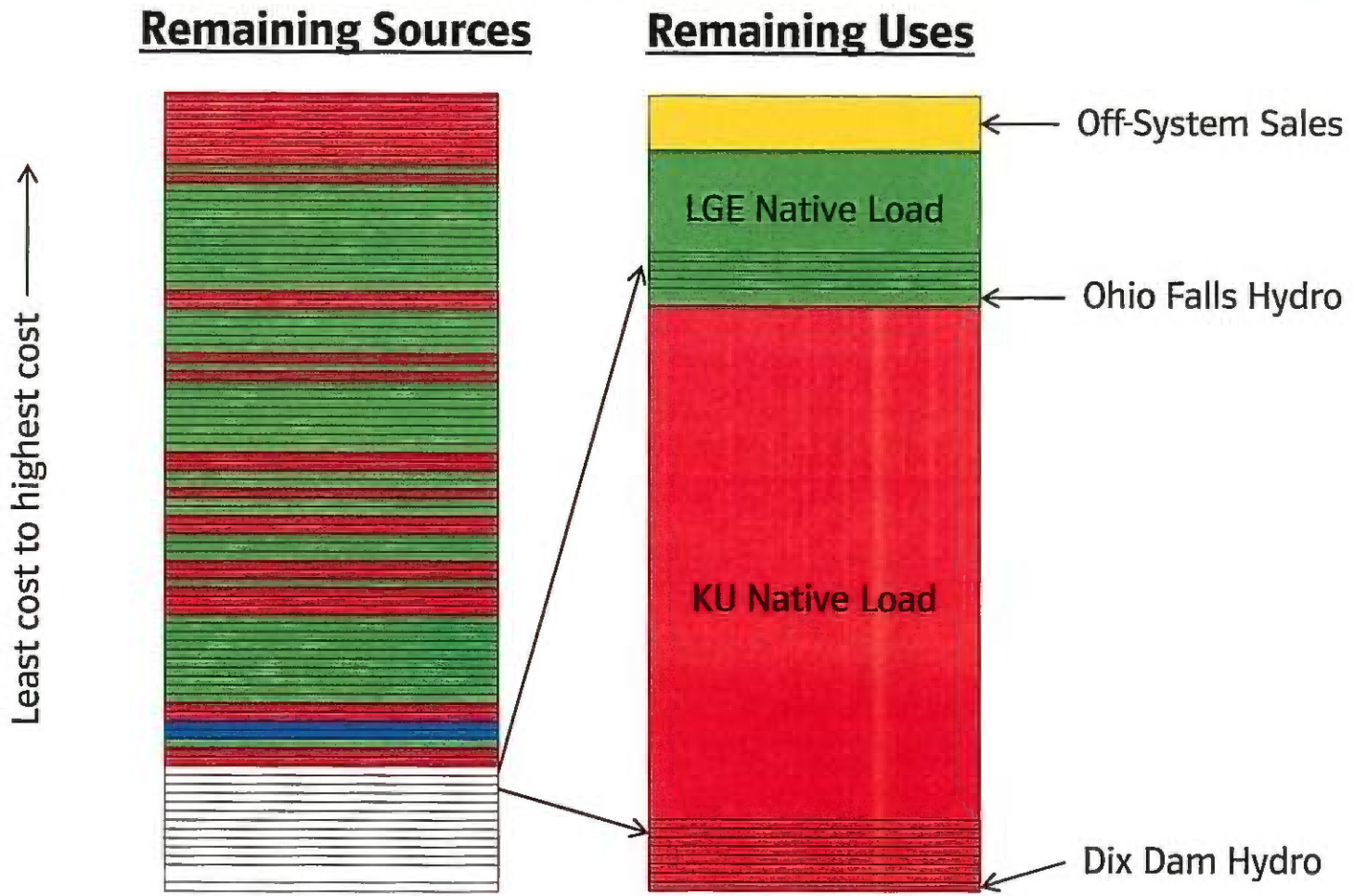

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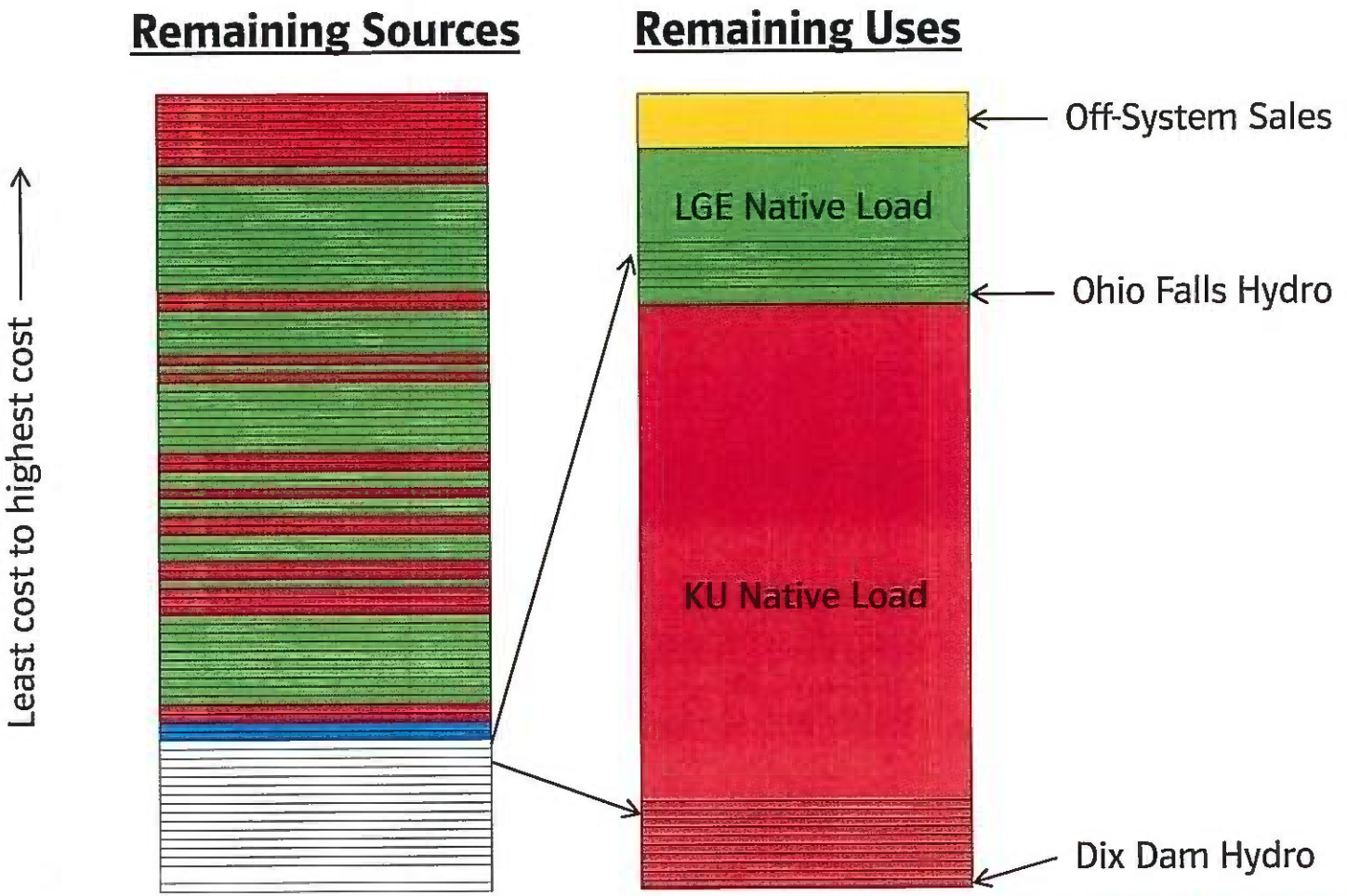

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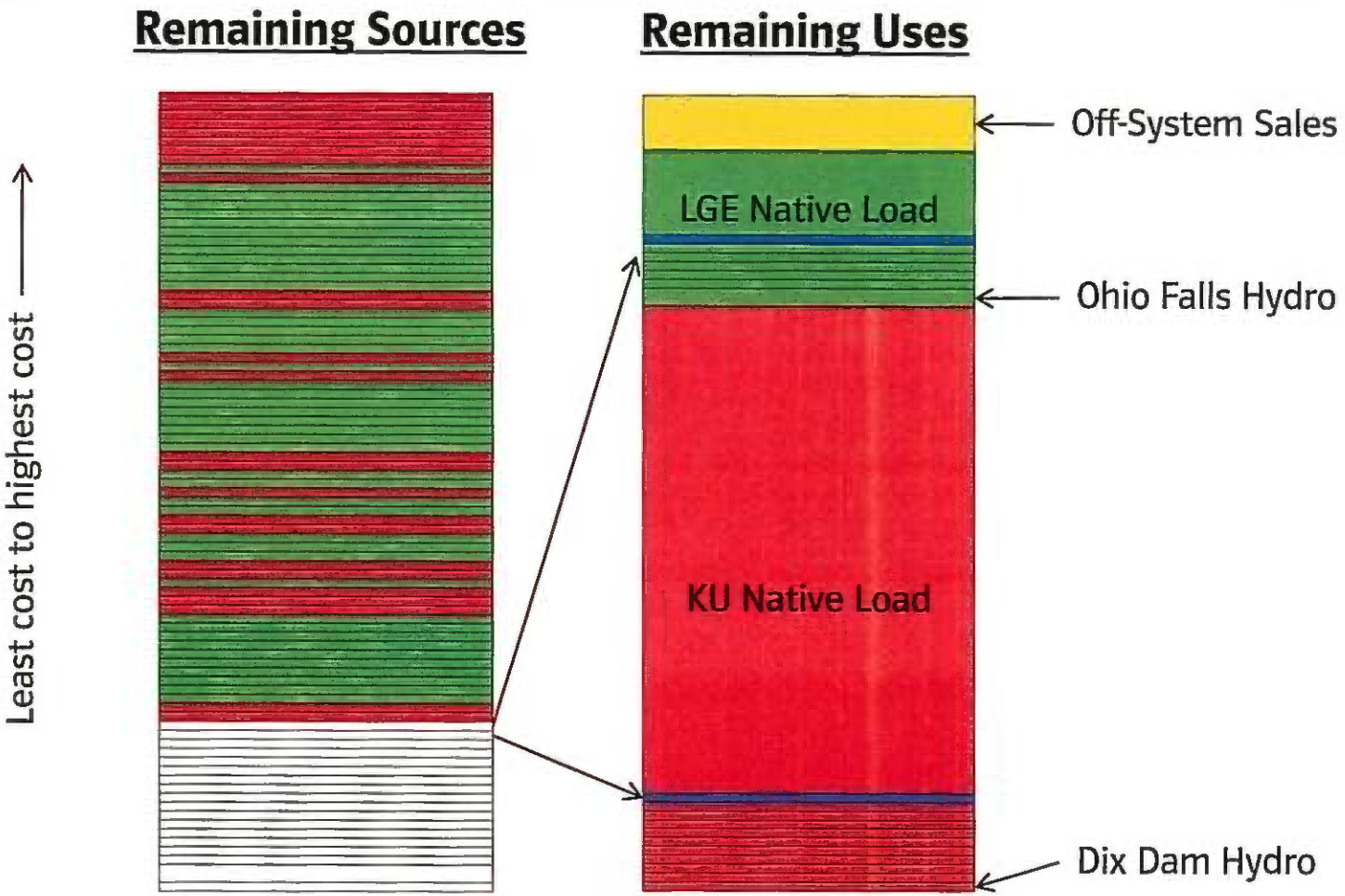

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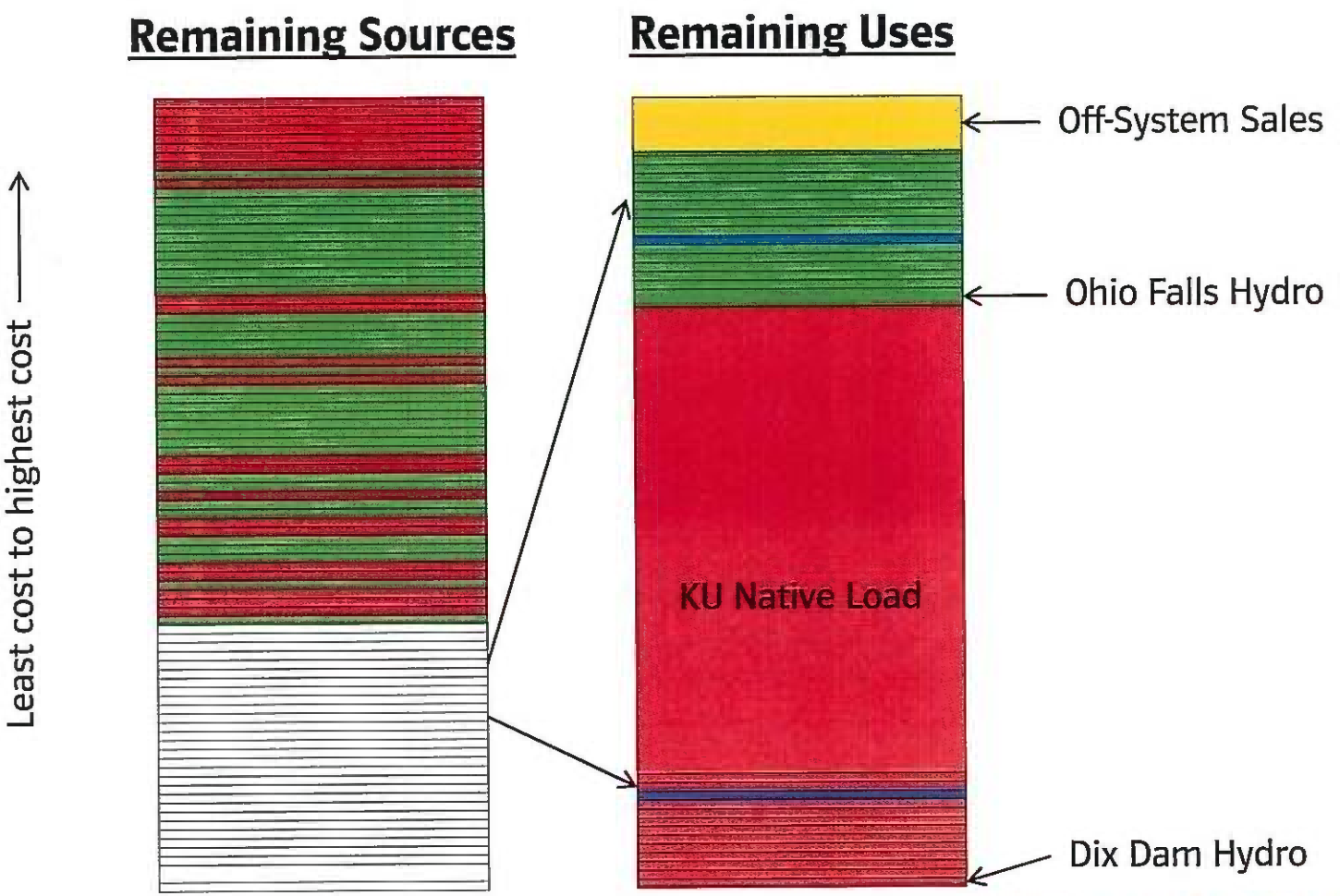
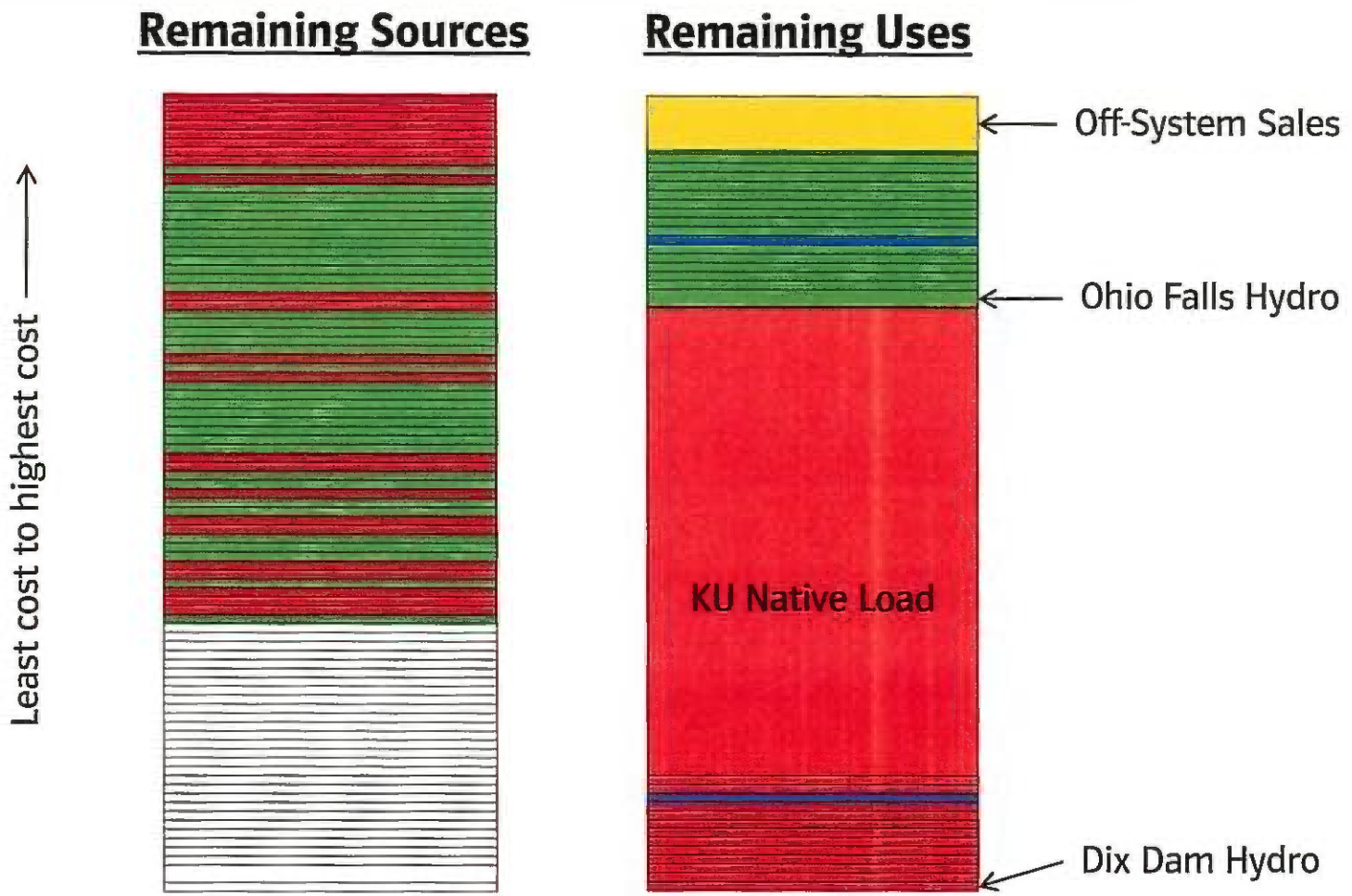


PPL companies

Step 3: Once one company's native load is fully served, continue assigning remaining MWs to other company's native load until it is fully served



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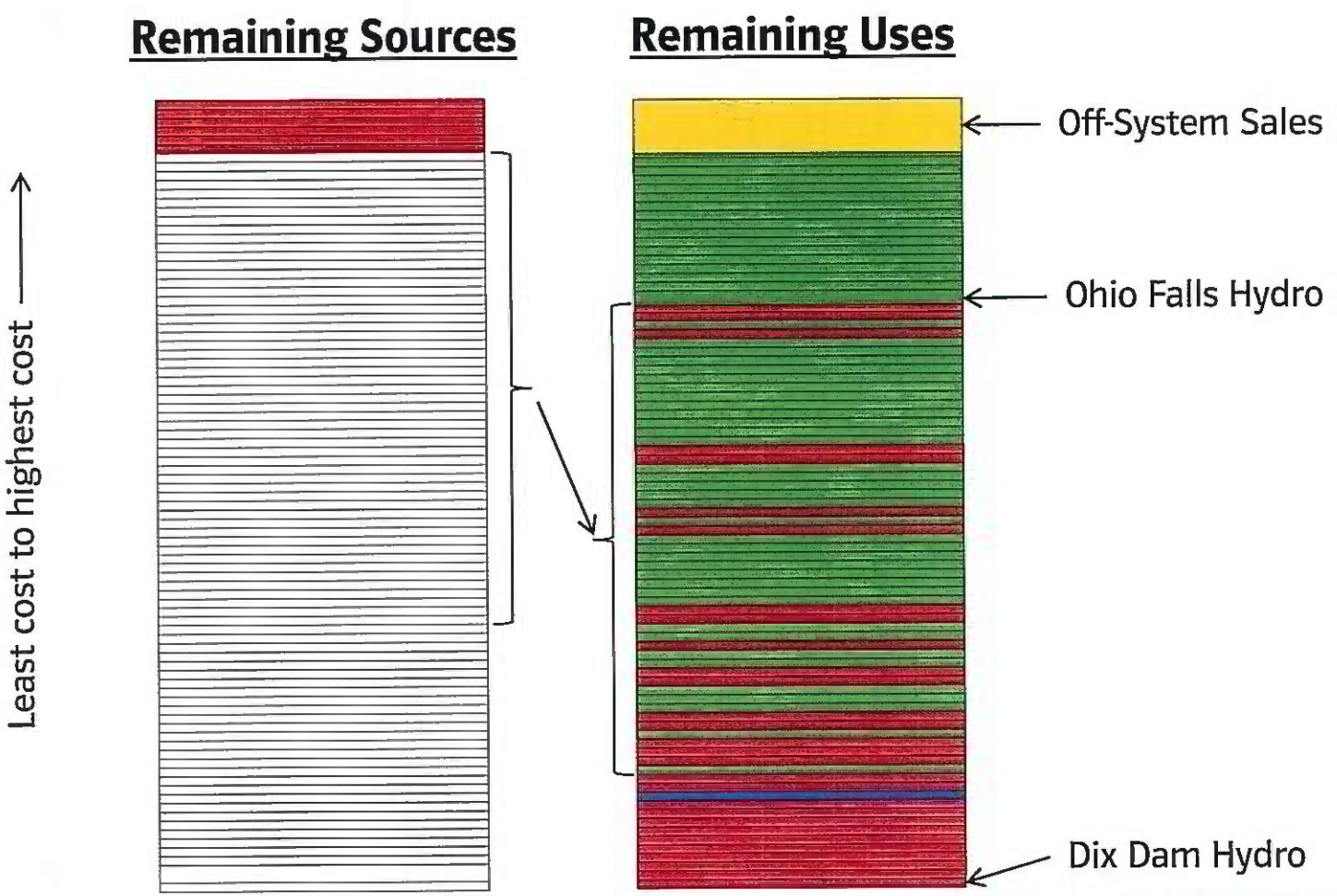
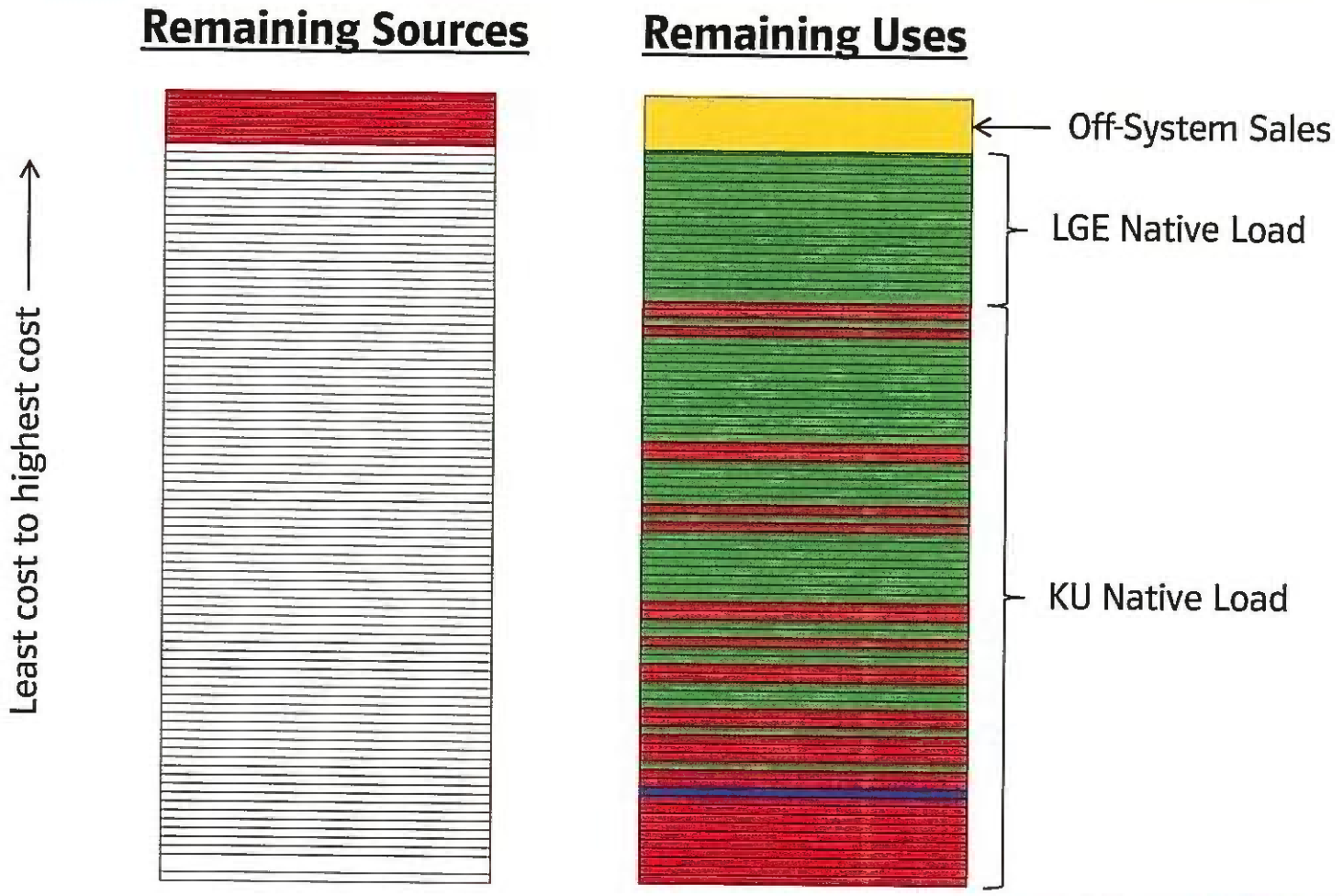


PPL companies

Step 4: Once both company's native loads are fully served, assign most expensive MWs to off-system sales



PPL companies

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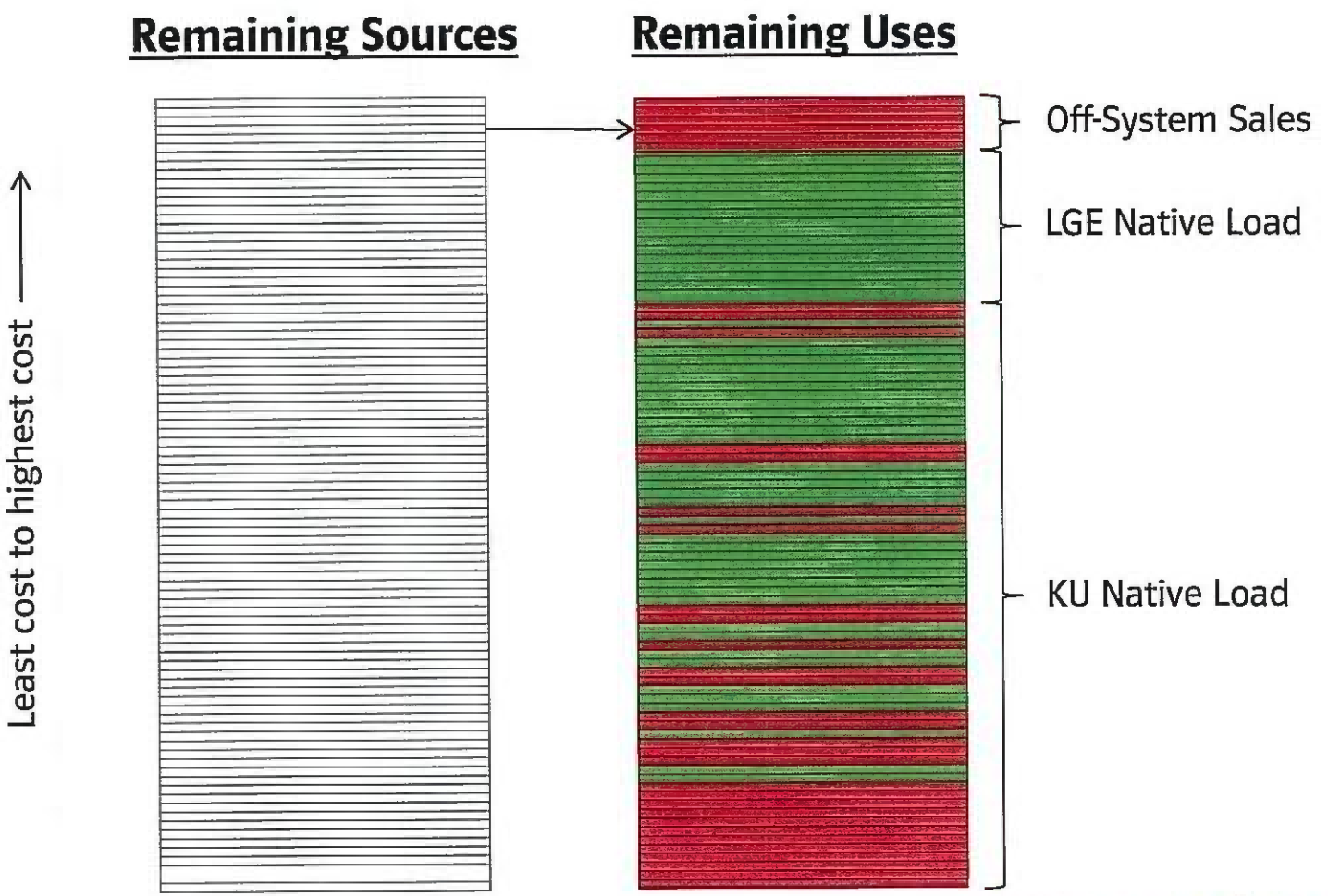


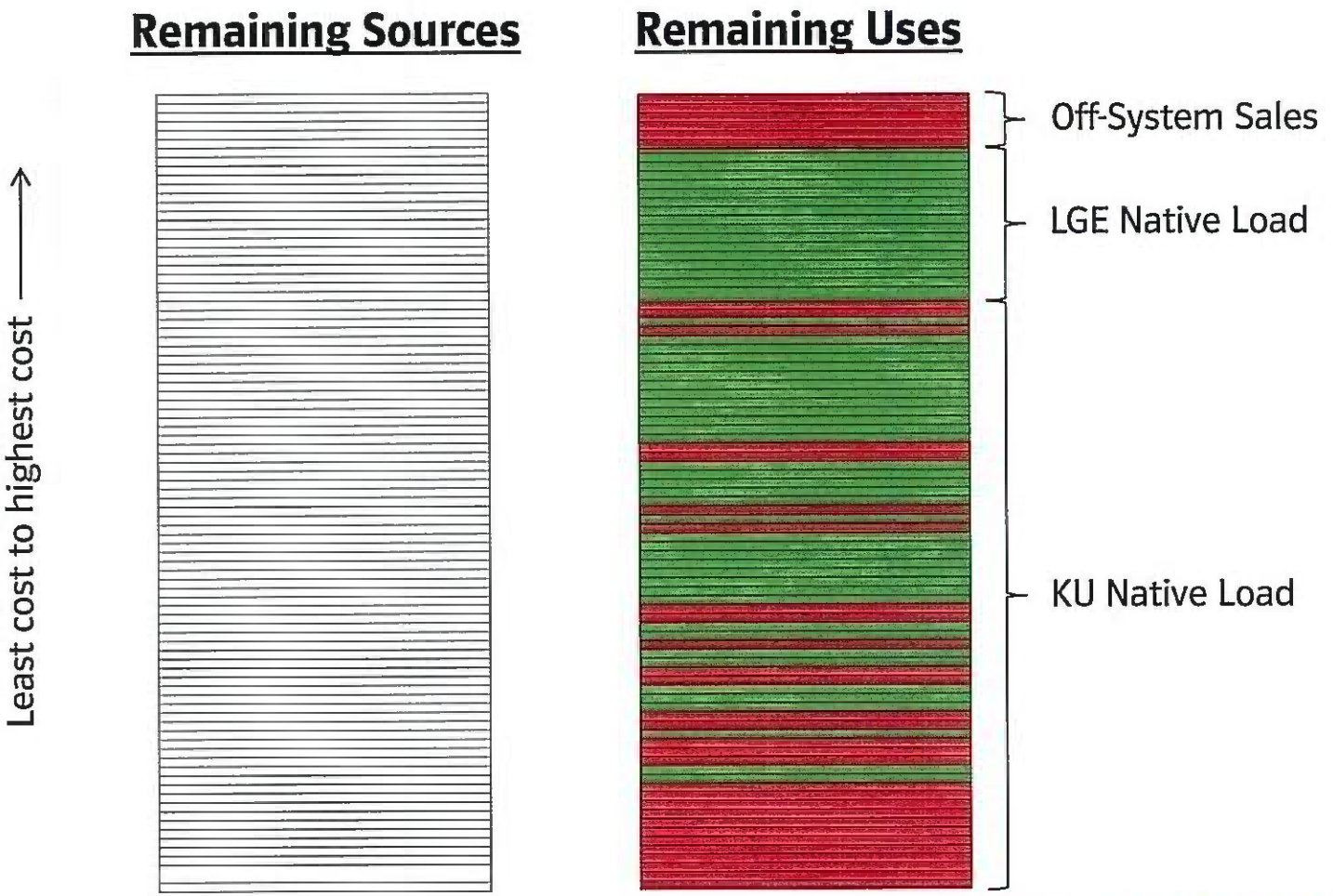
PPL companies

AFB provides basis for inputs on FAC Form A: Intercompany Transactions

- In AFB, assignment of MWs to LGE Native Load, KU Native Load, or OSS is based on incremental cost (IC).
  - IC_{MW} = Incremental Heat $Rate_{MW}$ * (Fuel Cost + Dispatch Adder)

- Cost of purchases and sales in Form A reflect fuel costs only.

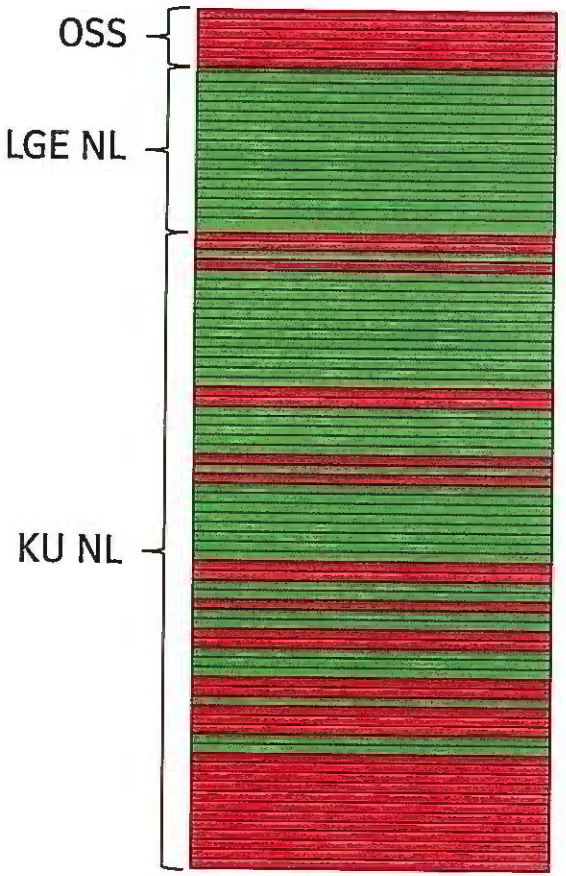
AFB provides basis for inputs on FAC Form A: Intercompany Transactions



PPL companies

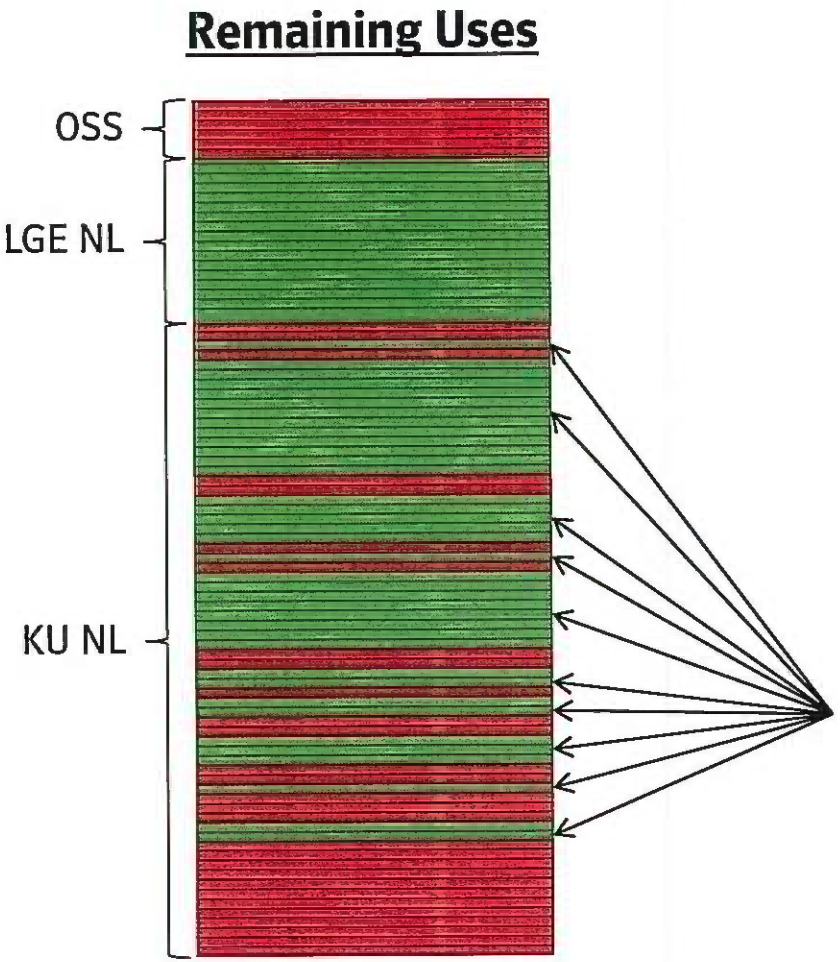
AFB provides basis for inputs on FAC Form A: Intercompany Transactions

Remaining Uses



PPL companies

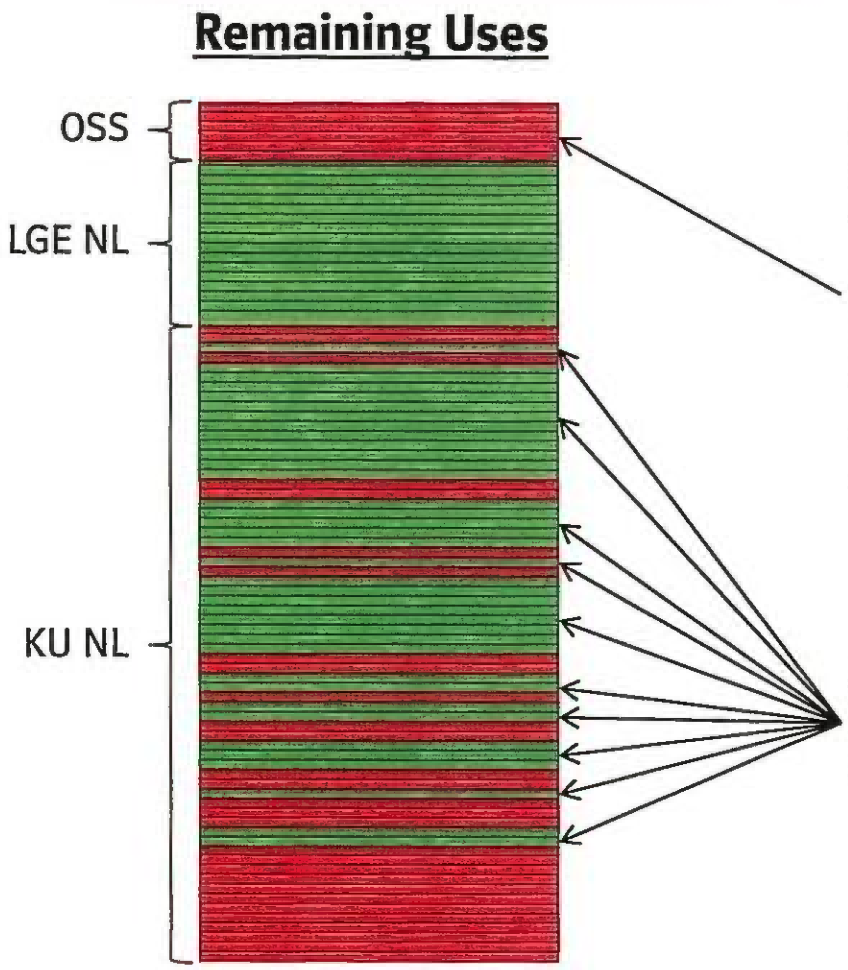
AFB provides basis for inputs on FAC Form A: Intercompany Transactions



LGE generation assigned to KU native load is an internal economy sale for LGE and an internal economy purchase for KU.

PPL companies

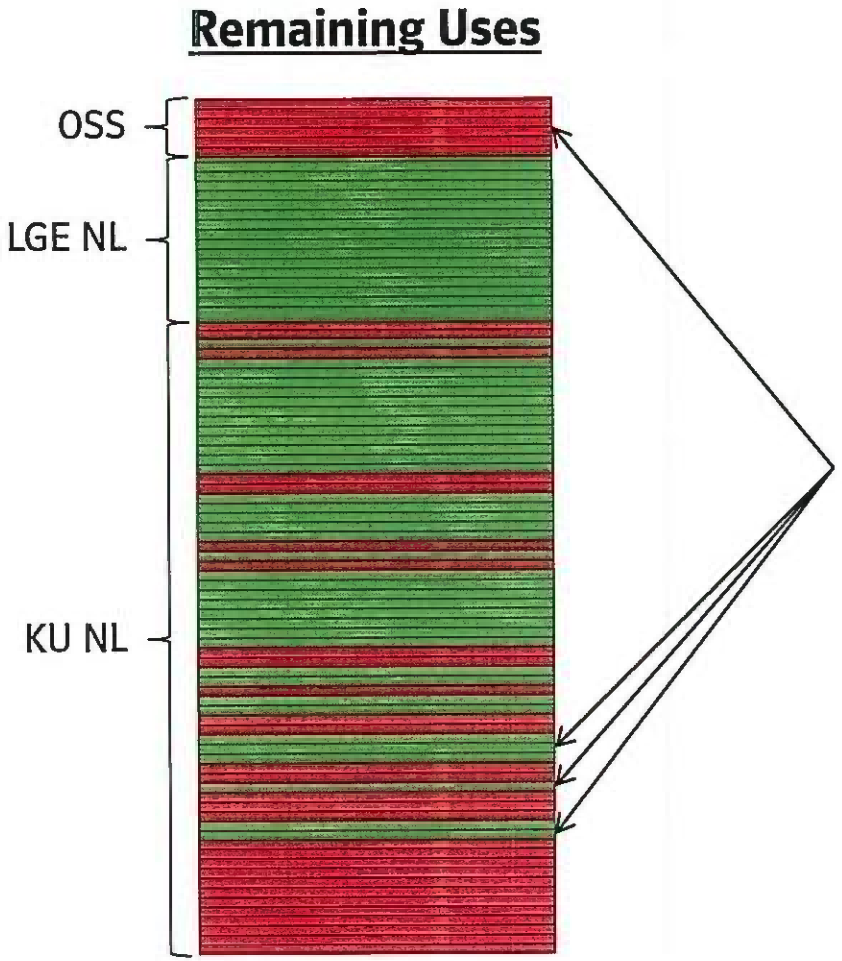
AFB provides basis for inputs on FAC Form A: Intercompany Transactions



KU generation is assigned to OSS. However, since the amount of LGE generation assigned to KU native load exceeds the amount of KU generation assigned to OSS, LGE will be credited with all OSS revenues in this hour. KU generation assigned to OSS is an internal replacement purchase for LGE and an internal replacement sale for KU.

LGE generation assigned to KU native load is an internal economy sale for LGE and an internal economy purchase for KU.

AFB provides basis for inputs on FAC Form A: Intercompany Transactions



Split Savings (for LGE) are computed as half the difference between (a) the fuel cost of KU generation assigned to OSS (LGE's replacement purchase) and (b) the fuel cost of the LGE generation that freed-up the KU generation for OSS.

Hypothetical numbers based on illustrative example

- LGE sold 1,200 MWs to KU for $48,000 (average of $40/MWh)
  - *Cost of 1st 200 MWs was $6,000 (average of $30/MWh)*
- 200 MWs of KU generation was assigned to 3rd party OSS
  - *Cost was $10,000 (average of $50/MWh)*

- Internal Economy Sale (LGE): $48,000
- Internal Economy Purchase (KU): $48,000
- Internal Replacement Purchase (LGE): $10,000
- Internal Replacement Sale (KU): $10,000
- Internal Economy Sale (LGE; Split Savings): $2,000 = ($10,000-$6,000)/2
- Internal Economy Purchase (KU; Split Savings): $2,000

Detailed Example

*Robert Conroy
LG&E and KU Energy LLC
220 West Main Street
Louisville, KENTUCKY 40202

*Louisville Gas and Electric Company
220 W. Main Street
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Louisville, KY 40232-2010

*Rick E Lovekamp
Manager - Regulatory Affairs
LG&E and KU Energy LLC
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*Ed Staton
LG&E and KU Energy LLC
220 West Main Street
Louisville, KENTUCKY 40202

*Honorable Allyson K Sturgeon
Senior Corporate Attorney
LG&E and KU Energy LLC
220 West Main Street
Louisville, KENTUCKY 40202