

Situation Report:

Hormuz Crisis: Supply Chain Cascade Update

Day 33 | April 1, 2026 | Marco Felsberger

1. Situation Summary: Day 33

<p>\$106.20/bbl BRENT CRUDE +46.5% from Day 0 (pre-war \$72.48)</p>	<p>3 confirmed PHYSICAL SHORTAGES crude · LNG · naphtha methanol: allocation constraint (M)</p>	<p>55+ FM DECLARATIONS ~92% Hormuz-linked (48/52 Prewave entries)</p>	<p>\$2,279/FEU DREWRY WCI 4th consec. weekly rise confirmed (26 Mar)</p>
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<p>April 6 TRUMP DEADLINE Energy strikes paused; toll legislation pending</p>	<p>~62% SCENARIO C Structural escalation; Scenario D introduced</p>	<p>\$3,481/t LME ALUMINIUM 4-year high (30 Mar, LME data); EGA/ALBA damage</p>
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Operation Epic Fury entered Day 33 on 1 April 2026.

Three commodity chains are in **confirmed physical shortage:**

- **Crude oil (Day 1)**
- **LNG (Day 3)**
- **Naphtha (Day 11).**

Methanol has entered severe allocation constraints at Chinese coastal ports but does not yet have named-source confirmation of a global physical shortage. This is tracked as approaching P50 breach under model estimates.

Helium P50 breach arrives Day 41 (9 April). Cascade inflection point is around Day 42 (10 April): 58% of simulation paths show six or more chains breaching simultaneously under the Hormuz-only scenario.

Three new developments since Day 31 materially shift scenario weights:

- Trump extended the Iranian energy-plant strike deadline to 6 April (Day 38) at Iran's request.
- The White House simultaneously signalled that Strait reopening is 'not vital' to ending the war, introducing Scenario D (war ends, toll regime persists, commercial closure continues).
- Iran's Parliament toll-fee legislation (Fars News Agency, 25 March) remains active; ceasefire alone will not restore P&I coverage if that bill passes.

Scenario Outlook

- Scenario A (**ceasefire by Day 40**) rises to 5-6% from 3%.
- Scenario C compresses to ~62% from 64%.
- Scenario D introduced at 3-5%.

Signal Status: Day 33

Signal	Status	Supply Chain Implication
Trump April 6 deadline	Pause extended at Iran's request; talks 'very well' (Truth Social, 26 Mar)	Scenario A rises to 5-6%. Energy plant threat credible if talks collapse 6 April.
White House decoupling signal	Rubio: Strait opens 'one way or another'; Trump: 'automatically opens when we leave' (Time, 30 Mar)	CRITICAL: War may end without Hormuz reopening. Toll regime could persist indefinitely.
Iran toll-fee legislation	Parliament drafting confirmed (Fars News Agency, 25 Mar) — not rescinded	P&I clubs will not restore coverage under Iranian toll jurisdiction. Reopening delayed 3-6+ months.
Pakistan mediation	Ishaq Dar in Beijing 1 Apr; talks 'in coming days'	Back-channel active. No named authority-holding Iranian interlocutor yet confirmed.
IRGC Navy Commander killed	Commodore Tangsiri + naval intelligence chief Rezaei killed by Israel, Day 26	Mine/drone operations less centrally coordinated. Escalation harder to control.
EGA / ALBA physical strikes	Confirmed Day 29 (28 Mar). LME +5.8% to \$3,481/t on Day 30 (C, AL Circle/LME)	Aluminium restart damage-timeline dependent. Cell freeze risk at struck potlines unresolved.
Houthi 'fully militarily ready'	Reuters 26 Mar — awaiting Tehran order. No activation confirmed Day 33	Highest-confidence pre-activation signal to date. Scenario B trigger if order given.

Sources: NPR, Fortune, Al Jazeera, CNBC, ABC7 (1 Apr live); Reuters (26 Mar); Wikipedia 2026 Strait of Hormuz Crisis (live, 1 Apr); Time (30 Mar); Fars News Agency (25 Mar).

2. What Is Breaking? Price vs. Physical Shortage

How to read this section: price increases vs. physical shortages.

Two things happen simultaneously in every supply chain that this crisis is disrupting:

- **Prices rise first**, in most cases from Day 1, before any physical supply stops.
- Then, in a subset of chains, **supply physically stops**: the commodity cannot be obtained regardless of what a buyer is willing to pay.

These require different responses. The Status column shows the most severe impact category each chain has reached by Day 33.

A commodity labelled **Physical Shortage** has already gone through a price shock. For example:

- Crude oil is \$106.20/bbl AND unavailable to uninsured buyers.
- Naphtha is at \$1,077/mt CFR Japan (up 74% from pre-war levels) AND Asian crackers cannot obtain sufficient volumes at any price (Dow CEO Fitterling, CERAWEEK, 27 Mar: 'about 20% of global petrochemical capacity is blocked').

Conversely, commodities labelled **Buffered or Approaching** face real price pressure now:

- Helium spot doubled in the first week (Kornbluth, CNBC 16 Mar);
- LME aluminium at a four-year high; urea up 43-57%. Physical shortage has not arrived yet.

Physical Shortage means unavailable to a material segment of normal buyers, not zero supply globally:

- Crude oil continues to India, China, and Pakistan under IRGC selective exemption.
- Recovery runs through reinsurance capital restoration and logistics as much as through diplomacy.
- C = confirmed named source. M = model estimate.

Commodity	Price Impact D33	Status	Mechanism & Key Facts	Most Exposed
Crude Oil	Brent \$106.20/bbl +46.5% from \$72.48 pre-war (C) WTI ~\$96/bbl (C)	PHYSICAL SHORTAGE Day 1 (C)	P&I war-risk withdrawn Day 5. IRGC selective toll corridor: Indian, Chinese, permitted-nation ships continue. 'Last tanker cleared' framing is imprecise — selective exemptions active.	Bangladesh, Pakistan (<20d buffer); global refinery margins
LNG	TTF ~EUR 75/MWh (M); +~70% from pre-war (EU estimate, Euronews 31 Mar) JKM elevated (C)	PHYSICAL SHORTAGE Day 3 (C)	QatarEnergy FM Day 3. Ras Laffan offline: ~20% of global LNG supply halted (Qatar's market share: ~20%, confirmed USGS/Al Jazeera/Rigzone). Shell 4x FM. EU framing note: TTF EUR 75/MWh << Aug 2022 peak EUR 340/MWh — EU faces price shock and	Bangladesh, S. Korea; EU winter 2026/27 storage fill

			winter 2026/27 storage fill risk, not current physical shortage.	
Naphtha	CFR Japan ~\$1,077/mt +74% from \$622 pre-war (C, PolymerUpdate 17 Mar) NWE ~\$800-850/mt (M) Polymer prices +35-70% (C, Syntex America Wk 4)	PHYSICAL SHORTAGE Day 11 (C)	NE Asia cracker utilisation ~70% (ChemAnalyst, Mar). EU crackers at 72% capacity. EU-direct FM: LyondellBasell, Orlen, OMV Burghausen, Ineos Styrolution Cologne. S. Korea 5-month export ban. ~5% global ethylene capacity under formal FM (Morgan Stanley, 13 Mar). Dow CEO Fitterling: 'about 20% of global petrochemical capacity is blocked' (CERAWEEK, 27 Mar).	EU industry (BASF), S. Korea fabs/auto, pharma packaging chain
Aluminium	LME cash \$3,481/t (30 Mar, C, AL Circle/LME) 4-year high (C) MJP spot premium \$250-300/t (C, Fastmarkets)	INFRA DAMAGE Day 29 (C)	EGA Al Taweelah + ALBA struck 28 March (confirmed). LME stocks 420,875t (-60% YoY, LME data). Cell freeze risk at struck potlines: unresolved. Qatalum 60% capacity. Calcined coke secondary constraint (Ras Tanura offline) absent from most models.	EU automotive, EV, aerospace; LME \$4,500+/t if cell freeze confirmed
Methanol	China CFR +28% from pre-war (M/ICIS) China coastal inventory critically low (M, SunSirs) Ar-Razi supply halt to Japan confirmed (C, C&EN)	ALLOCATION CONSTRAINT P50 breach: D32-35 (M — not yet C)	Gulf ~30-35% of seaborne methanol. Iran ~50% of China's seaborne imports (SunSirs). Ar-Razi Saudi Methanol (4 Mt/yr) suspended supply to Mitsubishi Gas Chemical Japan (C, C&EN). Critical offset: China domestic coal-to-methanol (~75 Mt/yr) — inland markets partially buffered. No named global FM confirmed as of Day 32.	Chinese chemicals/auto; methanol-fuelled shipping fleet (400+ vessels)
Helium	Spot +70-100% in first week (C, Kornbluth/CNBC 16 Mar) Contract prices not yet moved (C, Kornbluth) ~200 containers stuck in Gulf (C, Fortune 21 Mar)	APPROACHING P50 Day 41 — 9 April 8 days remain	Qatar ~30-33% of global helium as LNG by-product (USGS, confirmed). Ras Laffan halted Day 2. Containers hold helium 35-48 days before boil-off. Airgas FM Day 22 (US distribution). Contract prices will only move when FM declarations reach contract customers — imminent.	TSMC, Samsung, SK Hynix (64.7% from Qatar — C, USGS/Digitimes); hospital MRI globally
Urea / Ammonia	\$680-750/t spot +43-57% from \$475 pre-war (C, Fitch/ICIS) Urea at NOLA +32% in one week (C, Atlantic Council)	PRE-BREACH P50 Day 48 — 16 April	QatarEnergy SABIC, Fertigllobe, Kuwait GPIC FM. 24 fertilizer ships stranded in Gulf (US Fertilizer Institute, 30 Mar). China halted UAN exports 13 March. Gulf region produces ~30-35% global urea exports, ~20-30% ammonia exports (Wikipedia, confirmed). DECISION WINDOW TODAY: April 15 planting deadline is biological — not probabilistic.	India, Bangladesh, Pakistan (food security); Brazil (80% import-dep.)
Semiconductors	Helium input cost +70-100% spot (C, Kornbluth) Energy costs +50% crude-linked Finished chip prices:	BUFFERED Cascade begins D56 24 April	Samsung/SK Hynix: 3-6 month distributor/fab inventory from 2 March. D56 = distributor and smaller fab depletion, not Tier-1 halt. Tier-1 fab P50 disruption: ~September 2026. WTO warned Hormuz closure could 'crimp the	TSMC, Samsung, SK Hynix; automotive supply chain

	no material move yet (M)		global AI boom.' Price impact on finished chips lags input cost by 3-6 months.	
Pharma / Medical API	API feedstock cost +30% (C, India Parliament 11 Mar) Polymer prices +41-42% India (C, PolymerUpdate) EtO availability: tightening (M)	EMERGING Physical shortage window D35-70 (M)	NEW TRACKED CHAIN Day 33. Naphtha shortage drives EtO (device sterilisation) and IPA (solvent) input constraints. Gulf air hub disruption hits cold-chain biologics. EU generic price cap mechanism amplifies allocation distortion. 50% of India's plastics MSMEs halted production (Syntex America, Wk 4) — directly affects API packaging and device component supply.	EU/global hospitals (EtO-sterilised devices); cold-chain biologics; generics
Sulphur	Spot pressure (M/ICIS) US defense 'near total' critical mineral disruption (C, Scott Bessent/US Treasury, 30 Mar)	BUFFERED P50 breach D67 — 5 May	Gulf sulphur feeds Morocco OCP (world's largest phosphate complex) and acid-leach copper mining in DRC/Zambia. Scott Bessent (US Treasury, 30 Mar): US to 'gradually take control' of Hormuz — sulphur among critical minerals affected. OCP buffer ~45 days.	Morocco OCP; DRC/Zambia copper mining; downstream fertilizer

EU LNG 'physical shortage' applies to winter 2026/27 storage fill, not current procurement capacity. Aluminium cell freeze: cells below critical temperature → full reconstruction 6 months minimum. Methanol P50 breach Day 32-35 is a model threshold, not a confirmed event.

3. Cascade Timeline: Simultaneous Breach Model

Three chains are in confirmed physical shortage. The model tracks the probability of additional simultaneous breaches — the thresholds that produce multiplicative rather than additive disruption. Day 42 (10 April) is the planning deadline.

Date	Day	Cumulative Breaches	P(>=4)	P(>=5)	P(>=6)	Key Event / Action Window
1 Apr 2026	D33 — TODAY	3 confirmed (crude, LNG, naphtha) + methanol allocation constraint	~80%	~40%	~2%	Emergency urea procurement deadline TODAY. EGA cell status confirmation urgent.
9 Apr 2026	D41	+1 helium physical +1 methanol physical P50	100%	100%	~35%	Helium P50 breach. ~200 containers approaching boil-off. MRI rationing risk begins Day 62.
10 Apr 2026	D42 INFLECTION	+1 helium + urea approaching	100%	100%	~58%	INFLECTION: Majority of simulation paths show >=6 simultaneous breaches.
11 Apr 2026	D43	Russian crude waiver expires	100%	100%	~60%	30 Russian-linked tankers / 19 million barrels lose US legal cover. Asian refinery crisis converges.
16 Apr 2026	D48	+1 urea physical	100%	100%	~72%	Urea physical shortage. Planting window (15 April) closed. 2026 harvest yield deficit locked in.
~25 Apr 2026	D56	+1 semiconductor distributor	100%	100%	~88%	Distributor/smaller fab depletion. BASF curtailment deepens. Pharma API entering physical shortage window.
5 May 2026	D67	+1 sulphur breach	100%	100%	~93%	Morocco OCP and DRC/Zambia mining affected. Fertilizer and metals simultaneous.
8 May 2026	D70	+1 pharma API critical	100%	100%	~95.9%	Drug API critical shortage in 30% of simulation paths. MRI helium outages visible.

Model: Weibull AFT $k=1.50$ $\lambda=45.8d$, left-truncated Day 33. ABM 100,000 paths. Day 14 backtest: cascades 1-2 weeks earlier than modelled — timing estimates are outer bounds. Demand destruction feedback (15-25% cascade velocity offset) not modelled. P(>=4) and P(>=5) at D33 revised to reflect methanol's reclassification to allocation constraint. Dual-chokepoint (Houthi activation): P(>=6 at D42) rises to ~87%.

4. Force Majeure: 55+ Confirmed Declarations

55+ FM declarations confirmed as of Day 33: **52 from the Prewave dataset plus three Day 29 events (EGA, ALBA, Foulath Steel). 92% Hormuz-linked (48/52 = 92.3%).** Day 11 recorded 14 declarations in a single day — empirical cascade signature.

Analytical caveat: FM declarations are legal protection mechanisms filed preemptively on legal counsel's advice. The 92% Hormuz-linked figure is self-reported by declarants. Count confirms the crisis is real and broad; it does not confirm every declaration represents active physical shortage.

Day	Entity	Country	Chain	Status
D1-3	QatarEnergy	Qatar	LNG / Helium / Urea	Confirmed — Wave 1
D3-6	Petronet LNG / GAIL	India	LNG / Gas	Confirmed — India LNG
D4	ALBA (Aluminium Bahrain)	Bahrain	Aluminium	Confirmed — Wave 1
D6	Yeochoon NCC / LG Chem	S. Korea	Naphtha	Confirmed — Naphtha D6
D7	Kuwait Petroleum Corp	Kuwait	Crude	Confirmed — Wave 1
D11	Shell (4x declarations)	UK / Global	LNG	MAJOR — world's largest LNG trader
D11	LyondellBasell / Orlen / OMV Burghausen	NL / PL / DE	Olefins / EU	EU-DIRECT PRODUCTION FM #1-3
D13	Saudi Aramco (Safaniya)	Saudi Arabia	Crude	Confirmed — 20% output cut
D17	Iraq IOC fields (incl. Lukoil)	Iraq	Crude	Confirmed — Reuters exclusive
D22	Airgas (Helium)	USA	Helium	NEW — US distribution infrastructure breach
D24	QatarEnergy (long-term contracts)	Qatar	LNG / Helium	Confirmed — 5-year FM; CEO 3-5yr repair
D29	EGA Al Taweelah + ALBA (2nd strike)	UAE / Bahrain	Aluminium	Physical infrastructure damage
D29	Foulath / Bahrain Steel	Bahrain	Steel / Industrial	Group FM, full operations halt

5. Country Exposure and Buffer Status

Hormuz dependency establishes structural exposure; buffer status governs near-term operational risk. Japan at 80% dependency is better positioned than Pakistan at 85% because Japan holds 254 days of SPR (C) vs. Pakistan's 20 days (C).

Country	Hormuz Dep.	Crude Buffer	LNG Buffer	Status	Critical Vulnerability	GDP Loss
Bangladesh	HIGH 70%	5d (C)	4d (C)	CRISIS	Triple LNG FM. SPR exhausted. Remittance channel (3.3% GDP) under stress.	4.17%
Pakistan	HIGH 85%	20d (C)	18d (C)	CRITICAL	Highest crude dependency. Mediating Iran talks — partial transit access possible (M, unconfirmed).	3.08%
India	CRIT 45%	74d (M/C)	12d (C)	ELEVATED	Gas rationing cut ~800k t/month urea. API feedstock cost +30% (C, India Parliament). 50% plastics MSMEs halted.	3.89%
S. Korea	CRIT 68%	210d (C)	32d (C)	FRAGILE	64.7% helium from Qatar (C, USGS/Digitimes). Samsung/SK Hynix most exposed. 5-month naphtha export ban.	1.73%
Japan	CRIT 80%	254d (C)	90d (M)	BUFFERED	Best-buffered high-exposure importer. Ar-Razi methanol supply to Mitsubishi Gas Chemical suspended (C, C&EN).	1.61%
Taiwan	HIGH 55%	120d (M)	60d (M)	ELEVATED	TSMC helium exposure (30% Qatar-sourced, C, USGS). Fab continuity: 3-6 month inventory clock from 2 March.	1.61%
EU / Germany	MOD <10%	90d (M)	55d (M)	ELEVATED	LNG is price shock for current season (TTF +70%). Winter 26/27 storage fill is operative threat. Crackers 72%. EtO bottleneck emerging.	1.61%
China	MOD 15%	108d (M)	45d (M)	RESILIENT	Coal-to-methanol offsets ~50% seaborne methanol loss (C, SunSirs). NDRC banned fuel exports 4 March (C). Aluminium import exposure elevated.	1.61%
USA	LOW ~2%	~700d (C)	—	BUFFERED	Airgas FM creates domestic helium bottleneck. Jones Act waived 60 days. Ethane-based petrochemical producers gaining global market share.	< 0.5%

GDP Scenario C P50 from Day 10 ABM. E(energy)=-0.055, E(trade)=-0.042, remittance mult 2.8x (IMF). C = confirmed, M = model estimate.

6. Scenario Weights and Duration Model

Day 33 Bayesian update: Scenario A rises to 5-6% from 3% (Pakistan mediation, tankers released, April 6 deadline). Scenario C compresses to ~62% from 64%.

New Scenario D introduced at 3-5%: war ends without Strait reopening — Iran exerts toll sovereignty, P&I clubs do not restore, commercial closure persists. Material given White House decoupling signal.

Scenario	D20	D27	D31	D33 NOW	Brent Range	P50 Duration	Conditions
A — Short halt (by Day 40)	5%	3%	3%	5-6% UP	\$95-115	~35d	Ceasefire by Day 38. Iran accepts modified US terms. Pakistan produces framework. Toll legislation not enacted.
B — Extended standoff (Day 60-120)	30%	32%	33%	33% STABLE	\$106-160	~72d	Indirect channels active. Toll fee creates de facto controlled reopening. P&I normalises 8-14 weeks post-ceasefire.
C — Structural escalation (>Day 112)	65%	65%	64%	~62% DOWN	\$106-200 +	~125d	Israel continues strikes. Mine/drone operations less centrally coordinated post-IRGC commander. Kharg Island targeted.
D — War ends, Hormuz controlled (NEW)	—	—	—	3-5% NEW	\$80-95	Indefinite	US disengages militarily. Iran toll sovereignty. P&I clubs do not restore under toll jurisdiction. Commercial closure continues 3-6+ months post-war.

Model gap: Iran's fiscal position (zero oil revenue Day 1-33) not quantified as Weibull input. If domestic distress signals emerge, Scenario A should be revised toward 8-10%. Historical precedent: Iran accepted UNSCR 598 in 1988 driven by economic exhaustion.

7. Houthi Second Chokepoint

- Houthi 'full military readiness' confirmed 26 March (Reuters).
- No activation as of Day 33. IRGC commander's death may pressure proxy activation as asymmetric response.
- UAE Fujairah pipeline (Gulf of Oman, east-facing) is the sole intact bypass under dual-chokepoint scenario.

Flow Component	Pre-War (mb/d)	Hormuz Only (Today)	Dual Chokepoint	Source
Total Hormuz flows	20.0	~1.0 (selective exemptions)	~0.5-1.0	UN/EIA (C)
Saudi Petroline -> Yanbu (southbound to Asia)	~1.1 normal	~1.58-1.79 mb/d (see math note)	~0 BLOCKED	Windward/Vortexa (C/M)
Saudi Petroline -> Yanbu (northbound, Suez/EU)	~0.5	~0.62	Insurance risk	MercoPress/SUMED (C/M)
UAE Fujairah pipeline (Gulf of Oman — INTACT)	~1.2	~1.62	~1.5 INTACT	Kpler Mar 2026 (C)
TOTAL Asia-available supply (range)	~14+	~4.2-4.4 mb/d	~2.5	Resilience Engineers (M)
Reduction from pre-war	—	-68 to -70%	-82%	Resilience Engineers (M)

Insurance closure mechanism activates within 72 hours of first credible Houthi attack — no physical blockade required. Sources: Reuters (26 Mar), Wood Mackenzie (\$200 possible, Mar 2026).

8. Port & Logistics: Real Recovery Timeline

- Drewry WCI confirmed at \$2,279/FEU: fourth consecutive weekly rise (Drewry, 26 March, confirmed).
- CMA CGM FAK rates targeting \$3,500/FEU effective 1 April.
- **Median commercial recovery post-ceasefire: 5-8 months**

Port	Pre-Crisis Util.	Day 33 Util.	Delay Added	Status
Khor Fakkan (UAE)	18%	100%	No entry — full	SATURATED
Sohar (Oman)	35%	70%	+13.2 days peak	CRITICAL
Karachi (Pakistan)	14%	63%	Significant	CRITICAL
Colombo (Sri Lanka)	28%	50%	Rising	ELEVATED
Tanjung Pelepas (Malaysia)	25%	42%	Rising	ELEVATED
Singapore	48%	28%	—	EASING*

* Singapore easing = service restructuring (Gulf calls omitted), not demand improvement. Sources: Xeneta, Drewry WCI (26 Mar confirmed), gCaptain (26 Mar), Safety4Sea (26 Mar).

Recovery Phase	Duration	Key Constraint	Starts When
Ceasefire negotiations	Unknown	Iran rejected D25 plan; April 6 new deadline; toll legislation pending	Political resolution — no signal
Mine clearance (MCM)	3-6 weeks	No MCM announced Day 33	Immediately after ceasefire
P&I insurance reactivation	8-14 weeks	Sequential reinsurance capital restoration; toll legislation extends indefinitely if enacted	After MCM confirmed
Trapped fleet exits (surge)	2-4 weeks	170 ships / 450k TEU simultaneously	After insurance active
Relay port congestion clears	4-6 weeks	Khor Fakkan, Sohar, Karachi saturated	As fleet disperses
TOTAL median estimate	5-8 months	—	Post-ceasefire

9. Pharmaceutical & Medical Supply Chain: **New Tracked Cascade**

- Added as a tracked cascade at Day 33.
- Unlike single-chokepoint commodities such as helium from Ras Laffan or aluminium from ALBA, this chain has different
- Hormuz exposure at each upstream node. Supply chain process engineering decomposition below.

Bottlenecks by Node

Node	Bottleneck Type	Exposure	Impact Type	Window
EtO (ethylene oxide) sterilisation	Co-product of naphtha cracking. No substitute for sterile single-use devices — regulatory lock-in.	Direct — naphtha shortage (crackers at 72%) reduces EtO output	Physical absence	D35-55 (EU)
IPA / acetonitrile (API solvents)	Petrochemical derivative; India API sector import-dependent on Gulf feedstocks.	Indirect — cost +30% confirmed (India Parliament, 11 Mar, C)	Allocation constraint -> physical	D38-55
Cold-chain air freight (Gulf hubs)	Dubai/Doha/AbuDhabi handle ~40% of east-west pharma airfreight. Biologics cannot be rerouted by sea without degradation.	Direct — hub disruption delays insulin, vaccines, mAbs	Allocation constraint (re-routing capacity-limited)	D25-ongoing
EU generic medicine allocation	EU reference pricing and ALBVVG (DE) 2023 price cap law pre-distorted market toward single-sourcing. CEE countries already experience diversion.	Structural pre-existing vulnerability amplified by crisis	Allocation constraint — high-bid buyers displace CEE hospitals	Ongoing; worsening D33+

Sources: India Parliament session (11 Mar), ICIS, Syntex America (Wk 4, Mar), European Hospital Association, BfArM, WHO pharmaceutical supply chain reports, Indian Pharmaceutical Alliance, ALBVVG legislative text.

10. Decision Triggers: What to Watch

If You Observe This...	It Signals...	Supply Chain Action
RESOLUTION: Ceasefire confirmed + AIS transits >30/day + Lloyd's war-risk <300% normal + no toll legislation in force	Genuine reopening path. P&I restoration possible within weeks.	Begin naphtha/LNG resupply. Delay helium emergency procurement. Do NOT stand down urea orders — logistics pipeline lag remains.
TOLL FEE LEGISLATION PASSES: Iranian parliament vote confirmed	Ceasefire does not equal reopening. P&I clubs will not restore under Iranian toll jurisdiction.	Extend all shortage planning 3-6 months regardless of diplomatic signals.
DECOUPLING CONFIRMED: US disengages without Strait reopening	Scenario D. War ends; commercial closure persists. Iran toll sovereignty entrenched.	Worst-of-both-worlds outcome. All shortage timelines extend 3-6+ months beyond war-end date.
HOUTHİ ACTIVATION: Red Sea attacks confirmed + P&I extended to Red Sea + Yanbu southbound stops	Scenario B. Asia oil supply -82%. Brent \$130-160.	Emergency protocols: S. Korea, Japan, India crude substitution. Coal switching EU. Emergency helium allocation NOW.
APRIL 6 PASSES WITHOUT FRAMEWORK: No ceasefire signal + Brent spikes	US energy plant strikes likely within 48-72 hours. Scenario C deepens.	Brent \$130-150+. Pharma cold-chain emergency protocol. All commodity chains: maximum strategic procurement.
11 April: US waiver on Russian crude expires	Hormuz closure + Russian waiver expiry converge. 30 tankers / 19 million barrels.	Asian refiners competing for same non-Gulf grades. Additional Brent +\$5-10/bbl.
Iran named official confirmed as ceasefire interlocutor	Back-channel has authority. Ceasefire probability 3-5x current estimate.	Revise Scenario A to 15-20%. Begin ceasefire planning for reopening sequence.

APPENDIX A – KNOWN MODEL GAPS & CALIBRATION CAVEATS

Gap / Caveat	What It Means	Direction of Bias	Confidence
Demand destruction not modelled	Industrial capacity reduction at 72% naphtha compresses downstream demand. Offsets breach timing speed.	Overstates breach timing speed by est. 15-25%	Medium
China methanol domestic substitution underestimated	China 75 Mt/yr domestic methanol from coal. Gulf price spike makes domestic production immediately competitive.	Overstates China methanol shortage magnitude	Medium-High
Government front-running not captured	IEA 400 Mb SPR release, emergency procurement programmes, antitrust suspensions operate before cascade timing.	Overstates price severity and shortage speed	High
EU LNG framing	EU entered crisis with historically high gas storage. TTF EUR 75/MWh << Aug 2022 peak EUR 340/MWh. Physical shortage applies to winter 2026/27, not current heating season.	'Physical shortage' label misleading for EU policy audiences	High
Iran fiscal pressure not quantified	Zero oil revenue Days 1-33; intensified sanctions. UNSCR 598 precedent: economic exhaustion drove capitulation.	Scenario C potentially overstated by 5-8pp	Low-Medium
Toll legislation scenario new at Day 33	Scenario D (war ends, toll regime persists) not in Day 31 model. Now at 3-5%. Adds 15pp to P(>=6) if enacted pre-ceasefire.	Prior versions understated reopening complexity	Medium
Pharma supply chain previously untracked	EtO sterilisation, IPA solvents, API feedstocks noted as naphtha downstream risks but not separately tracked.	Prior versions understated healthcare system exposure	Medium

Treat breach dates as outer bounds with 15-25% expected timing advance (per Day 14 backtest). Treat severity estimates as upper bounds with 30-40% downward correction from offset factors. Treat Scenario C probability as potentially 58-64% rather than headline 62%.

Confirmed Sources (C)

Kpler/MarineTraffic, UANI (24 Mar), Reuters (26 Mar), CNBC (16 Mar, 25 Mar, 28 Mar), Shell statement, S&P Global, Fortune/Reuters (Brent), Lloyd's List, Kornbluth Helium Consulting (CNBC 16 Mar, Reason.com 16 Mar, Fortune 21 Mar), C&EN/ACS, ICIS, World Fertilizer, Fitch Ratings, The National (29 Mar), Gulf Business (29 Mar), Prewave (52 FM entries), Xeneta, Drewry WCI (26 Mar confirmed), gCaptain (26 Mar), Safety4Sea (26 Mar), Drewry Trackers (27 Mar), Linerlytica (trapped fleet), Windward Maritime (Yanbu flows), Vortexa (effective loading), IEA OMR March 2026, IEA Oil Market Report 12 Mar 2026, Wood Mackenzie (Mar 2026), NPR (26 Mar), Al Jazeera (26 Mar, 2 Mar), ABC7 (1 Apr live), Time (30 Mar), Wikipedia 2026 Strait of Hormuz Crisis (live, 1 Apr), Wikipedia Economic Impact of the 2026 Iran War (live, 1 Apr), AL Circle (30-31 Mar), Oilprice.com futures (1 Apr), Yahoo Finance BZ=F (1 Apr), EIA STEO (Mar 2026), India Parliament session (11 Mar), US Fertilizer Institute (30 Mar), AFBF, FAO, IFA, Rabobank Agri Research, NDSU Extension, PolymerUpdate (17 Mar), Syntex America Weeks 3-4 (Mar 2026), Alkagesta (17-19 Mar), ChemAnalyst (Mar 2026), Atlantic Council (Mar 2026), Euronews (31 Mar), Dow CEO Jim Fitterling at CERAWEEK S&P Global (27 Mar, Fortune), European Hospital Association, BfArM, Indian Pharmaceutical Alliance, ALBVVG legislative text, LME aluminium data (30 Mar: cash \$3,481/t, stocks 420,875t), Digitimes (29 Mar), SunSirs (methanol/China), USGS Mineral Commodity Summaries (helium), Rigzone (Qatar LNG), Scott Bessent/US Treasury (30 Mar).

Model (M): Weibull AFT $k=1.50$ $\lambda=45.8d$; logistic S-curve ABM 100,000 paths; GDP elasticities $E(\text{energy})=-0.055$, $E(\text{trade})=-0.042$, remittance multiplier 2.8x (IMF). Backtest (Day 14): 13/14 confirmed; cascades 1-2 weeks earlier than modelled; oil price P50 magnitude acknowledged miss; mine warfare onset (Day 14 observed, not predicted). v2 corrections vs. v1: LNG global share corrected to ~20% (was 30-33%, conflated with helium); methanol downgraded from confirmed physical shortage to allocation constraint; Drewry WCI corrected to 4th consecutive weekly rise; Yanbu flow arithmetic stated as range; Brent percentage corrected to +46.5%; FM count reverted to 55+; Section 01 Brent price trajectory removed at author's direction.