STAR ATLAS

Golden Era

PART I

Game Economics

01

Introduction

01.1

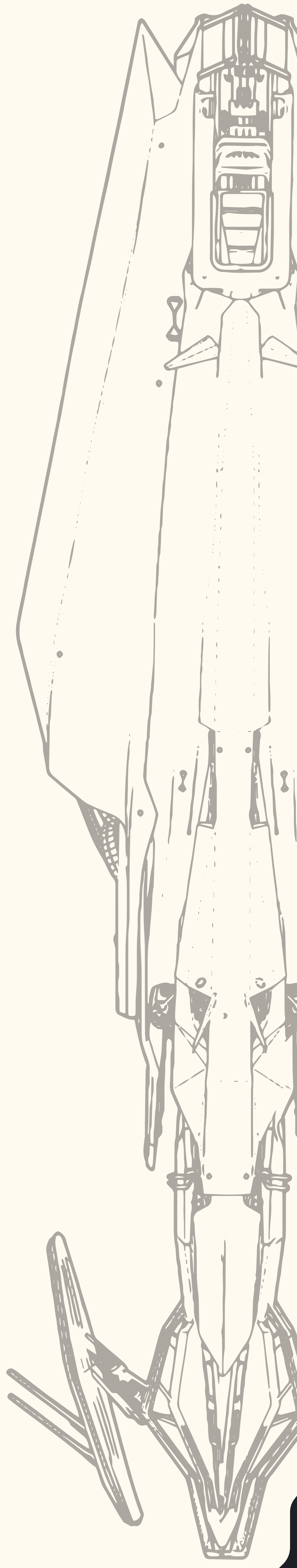
SAGE Economics

The SAGE economy is a massive step for both the Star Atlas ecosystem and web3 and will be the future economic cradle for UE5 gameplay. It brings us one step closer to a fully decentralized free-market economy. The development of the economic structure of SAGE will be a non-linear process over years. In SAGE, the economy is directly linked to player behavior and gameplay choices — economic productivity and efficiency will be molded by mining, crafting, combat, and many other gameplay features players decide to engage in.

The Economics team has worked in depth with the SAGE Game Design department to ensure that every component of gameplay has been translated to work well economically. We recognize the importance of balance in design and economics and have spent many months working in unison to achieve that continuity.

Our goal at Star Atlas is to make a living, breathing economy that reacts to players and their decisions. That means that the emission and production of resources, as well as ATLAS, will be dynamically determined by the players based on their choices. Some will earn a real wage in an open economy through economic gameplay like mining, crafting, and production. Others may use their capital to bypass these economic productivity loops to focus on more aggressive gameplay like combat. Further, some might use their economic ingenuity and strategy to outsmart their opponents to take over economic empires from within. There are many ways to play SAGE, all of which contribute to the rich and growing economic ecosystem of Star Atlas.

The freedom to choose your own adventure is key to challenging, long-lasting, and fun gameplay. These adventures will coincide perfectly with the rich world the lore team has developed here at Star Atlas. Players produce in the same rich world where the events of the Star Atlas graphic novel, CORE, occur. There will be tough choices with real consequences in SAGE. Constant returns will no longer be assured; players will win or lose based on their gameplay decisions, skill, and maybe a little luck. Economic gameplay skills and the desire to understand the changing dynamics will be a boon to those who dedicate themselves to analysis of the marketplace conditions. Decisions will not always be as simple as they appear, SAGE is meant to challenge the player to evaluate all possible outcomes, and to make many decisions that will have a compounding impact over time.



02

SCORE vs SAGE

To begin, we want to introduce veteran Star Atlas players to some of the differences between SCORE and SAGE and how the two projects are related.

In SCORE, players earned ATLAS by deploying their ships in our Faction-Fleet mini-game. Players were required to keep their fleets properly fueled with Food, Fuel, Ammo, and Toolkits (R4) to reap these rewards. In SCORE, rewards and burn of R4 were completely static. In SAGE, not only will ATLAS emissions and R4 burn be dynamic, players will now have the ability to earn resources through gameplay. SAGE moves us one step closer to a fully-fledged and financially realized digital economy.

In SAGE, players will use their ships to travel around a top-down, isometric universe in order to mine for resources, freight cargo, convert resources into final goods, and, of course, participate in consequential combat. Behavior in SAGE will directly impact the SCORE environment in that players will now be able to subsidize their R4 costs through mining in SAGE. Furthermore, players will be able to earn ATLAS in SAGE.

See the table to the right for an outline of the primary game economic changes from SCORE to SAGE.

	SCORE	SAGE	EXPECTED CHANGE
ATLAS Earnings	YES	YES	While ATLAS earnings will be based on effort also in the SAGE economy, we do not anticipate a large disparity in average ATLAS emissions per player
ATLAS Locking	YES	YES	There will be no changes to the ATLAS locking protocol
POLIS Locking	YES	YES	There will be no changes to the POLIS locking protocol
R4 Burn	YES	YES	R4 Burn will be variable on the action in SAGE as opposed to SCORE where they are constant
Free Flight	NO	YES	Players will be able to take their fleets into a large network of systems that is the Star Atlas universe.
Mining	NO	YES	Players can now extract resources from planets
Crafting	NO	YES	Players can now transform resources they have mined into more useful assets like R4 and Starbase upgrading materials
Combat	NO	YES	Players may now participate in economically consequential combat
Ship Interaction	NO	YES	Players can now manage the cargo, configuration, and geographic location of their fleet in the Star Atlas Universe
3D Modeled Ship	NO	YES	Players can now see and interact with their fully functional, in-engine ships
Starbases	NO	YES	Players can now interact with Starbases, furthering the dimensionality of the Star Atlas digital world
Open Resource Market	NO	YES	Players may now produce and trade assets they have found in the game world

02 SCORE vs SAGE

02.1 R4

As we mentioned above, the SAGE economy will be entirely player driven. That goes for the R4 supply as well. Players who switch from SCORE to SAGE will find that they produce a fair amount of R4 through SAGE gameplay. They can then take this R4 and subsidize their R4 costs in SCORE by fueling their ships. That is, by playing SAGE, you can curb the amount of R4 you have to purchase for your fleet in SCORE. For example, suppose a player takes their Rainbow Om out of SCORE and mines 100K Hydrogen and converts this to Fuel (as of this writing, that's about 20K Fuel). A player can then fuel their PEARCE C9 for almost an entire day. That's ATLAS in your pocket you didn't have to spend fueling your C9.

We discuss R4 and mining later in this document, but this is the primary way that the SAGE economy will impact SCORE in terms of R4. This will naturally curb the amount of R4 purchased with ATLAS in the SCORE economy. Eventually, R4 will not be sold directly to the market. It will then be up to the players to be productive and generate enough R4 to fuel their ships both in SCORE and SAGE. Just like in a real economy, the price of resources will not be static but will be determined by supply and demand.

Below is a graphic showing the hypothetical increase in Net ATLAS Yield across all ship classes if players are able to completely subsidize their R4 purchases with SAGE R4 earnings. We emphasize that this graphic is purely illustrative. The gray bars represent current Net ATLAS yields for each ship class. The gold bars represent a player who is now earning an R4 through SAGE gameplay and using it to offset their cost of R4 in SCORE. This mechanism drives Net ATLAS Earnings higher.

SCORE Net ATLAS Yield with SAGE

02 SCORE vs SAGE

02.2

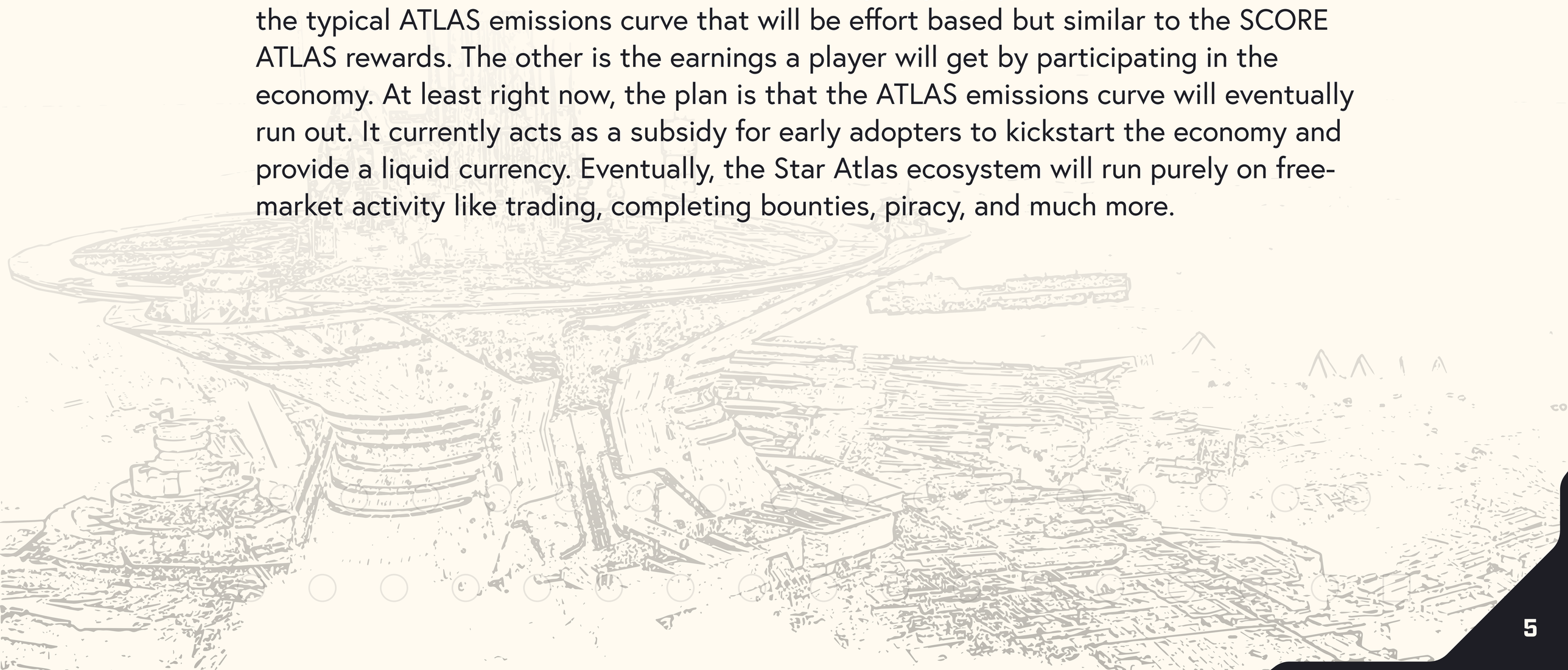
ATLAS

ATLAS rewards will be similar to SCORE in that players will earn ATLAS as a function of their fleet class size. However, in SAGE, these rewards will further depend on a player's activity in the SAGE virtual world. In a later section, we describe in detail how players will earn ATLAS Emissions in SAGE. For this section, know that ATLAS emissions in SAGE will be determined by a player's contribution to their faction's fight for the galaxy on the game map. If their contribution is high relative to their peers, they will get a large piece of the pie. This said, ship class and characteristics greatly dominate the contribution of ATLAS rewards in SAGE. For example, an XXS ship may require 250 times the amount of gameplay time to earn what a Commander could in a set period of time.

The transition from SCORE to SAGE will be handled delicately by the Star Atlas Economics Team, but players should know that the economic benefits of playing SAGE will at least match up with those in SCORE, on average. We have developed a plan to deprecate SCORE (see 1.4) as we know it today and integrate it into SAGE. The transition away from SCORE will be gradual but is necessary to build the SAGE player base and grow its economy.

In the previous section, we explained why a player would benefit by pulling ships out of SCORE and bringing them into SAGE. But there will be even more opportunities to earn in SAGE through other production processes, such as producing Starbase upgrading materials, ship resources, and many other gameplay materials that can be sold on the galactic marketplace. For every person willing to spend their time producing a good, another person is just as willing to spend the ATLAS to get it without doing the work. Just like in the real economy.

To summarize, in SAGE, there will be two primary ways players can earn ATLAS. One is the typical ATLAS emissions curve that will be effort based but similar to the SCORE ATLAS rewards. The other is the earnings a player will get by participating in the economy. At least right now, the plan is that the ATLAS emissions curve will eventually run out. It currently acts as a subsidy for early adopters to kickstart the economy and provide a liquid currency. Eventually, the Star Atlas ecosystem will run purely on free-market activity like trading, completing bounties, piracy, and much more.



02

SCORE vs SAGE

02.3

Marketplace and DAO

Neither the Marketplace nor the DAO will see any direct changes come the SAGE release. There will, however, be some indirect impacts. For example, the marketplace will see an influx of new resources like Starbase upgrading materials and ship bonus items like shields and boosters. One final impact on the marketplace will be the SAGE players' ability to sell their refined R4 to the marketplace. The most likely buyers of this R4 will be those still in SCORE or those who do not want to mine and refine for their own R4.

The DAO functionality will not change. However, some players will have earned more in SAGE than they did in SCORE, increasing contributions to ATLAS and POLIS locking. While it is not planned for SAGE V0, the DAO will eventually start to contribute more broadly to policy in SAGE and the Star Atlas ecosystem.

With the transition to a fully functioning and self-contained economy, R4 will be a dynamic asset produced and sold by players and not sold at a static price by the DAO. An increase in secondary market activity due to SAGE production and trade will make up for some, if not all, of the loss in DAO revenue from halting primary R4 sales. Since we introduced the variable 6% marketplace fee on September 29th, 2022, the DAO has received one-third of all marketplace transaction fees.

02

SCORE vs SAGE

02.4

Deprecating SCORE

Since inception, SCORE has provided a massive utility to early adopters in the Star Atlas ecosystem. It has served its purpose as a great way for Star Atlas natives to maintain the utility of their assets while our team develops out an incredible game. However, as the SAGE and UE5 Seasonal experiences introduce new closed-loop economic incentives, SCORE's primary utility is replaced with more robust gameplay. As such, SCORE will be sunset.

Already, we see thousands of players entering the UE5 showroom and using their ships with great effect. With powerful gameplay such as this, most players won't need or want to keep their ships in SCORE any longer. Furthermore, as we fill out our fully player- driven economy, the SCORE economy will eventually become redundant. Some of these economic changes are outlined below:

1. The production and supply of R4 in the Star Atlas economy will depend entirely on the player population. As such, the DAO will cease to sell R4 at a fixed price with infinite supply on the Galactic Marketplace.

2. As players begin earning the majority of their ATLAS emissions in SAGE, they will have very little incentive or reason to hold ships in SCORE. In addition, players will begin earning a productivity wage based on their economic behavior within SAGE. With these two forms of earning dominating the Star Atlas Ecosystem, SCORE emissions will be deprecated along with SCORE R4 Burn. Eventually, all ships will belong in the SAGE or UE5 ecosystems.

The economics team at Star Atlas will handle SCORE's deprecation with delicacy, appreciating any sentimental value early adopters may hold to the platform. Our philosophy follows: Players will likely not notice the deprecation of SCORE as by the time this occurs, the vast majority of players will be using their fleets in the SAGE and UE5 game environments. The economy of SCORE will be fully enveloped in the new economy that comes with SAGE. We appreciate the significance of the eventual sunset of SCORE and will provide detailed information on the process as we go.

03

Game Economy Mechanisms

The Star Atlas SAGE economy is organic and expected to grow indefinitely with the Star Atlas population. Not only will the economy grow as the Star Atlas product grows and releases new content, but it will also grow with the players as they discover new ways to behave and optimize economic processes, just as we see done in the real world. The SAGE economy is designed with a free market in mind, without reliance on intervention by a centralized authority. Much like the real economy is a living, breathing thing, so too do we expect the SAGE and future economy of Star Atlas to be.

The following sections outline the many major aspects of the Star Atlas in-game economy. This manual is expected to grow over time with the Star Atlas economy. In each section, the reader will pick up tips and tricks about how they might expect each economic process to function. The reader should pick up at least a few hints to help guide their gameplay toward an optimum.

The Star Atlas in-game economy is designed with neo-classical economic theory in mind. Thus, players must decide what they believe to be optimal economic efficiency. However, just as in real life, best-laid plans seldom hold up to the test of application. The most economically bountiful areas in the Star Atlas universe will also be the most dangerous. One cannot behave entirely individualistically. One has to consider their competition. As John Nash famously proved, sometimes the optimal behavior changes by adding adversaries into the system. The more competition in Star Atlas, the higher the reward and, in turn, the stakes.

We hope the reader will find this manual helpful in their travels throughout the Star Atlas universe and insightful as an exercise in economic thought.

03

Game Economy Mechanisms

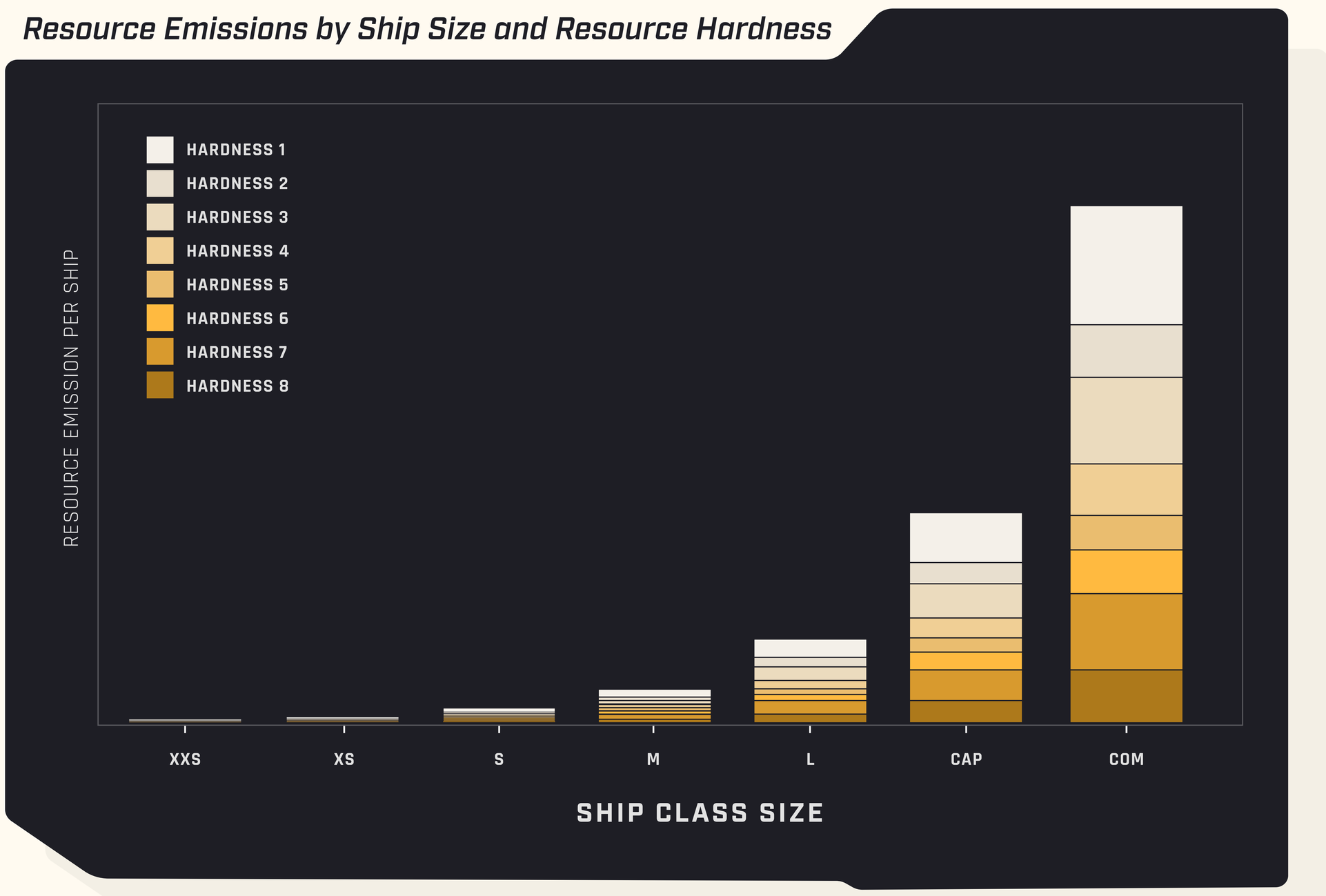
03.1

Mining

Resource emissions in SAGE are handled quite simply. Much like in the real world, resources are seldom limited by some artificial cap in quantity. Rather, they are limited by pure scarcity. Scarcity should not be confused with the quantity available. As we have seen in the past with MMORPGs, quantity-limited spaces for resources lead to very unfun gameplay and can be detrimental to the growth of a game. At Star Atlas, we take the so-called "size of the straw" approach, where a resource is limited only in the speed at which it can be extracted from a location (and by whether or not it spawns). Scarcity determines this speed. Many variables impact the scarcity of a resource.

When a player commits to mining at a specific planet, the resources emit from the planet to the player are based on several factors. Below is a visualization of planet-to-ship class resource emissions as they will be in SAGE. We discuss each variable and its impact on emissions in the following sections.

Resource Emissions by Ship Size and Resource Hardness



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Game Economy Mechanisms

Resource Richness

First, the difficulty of finding the resource will impact the acquisition rate. It could be the case that a resource is near-impossible to find, but once you have found it, supply is abundant. The difficulty in acquiring this resource is due entirely to the hunt. Remember that once you find that beautiful resource, morally questionable individuals may be biding their time to gain those resources the easy way. The visualization above is derived for a specific value of richness. The bars in the figure will increase in height for a more rich area.

In SAGE, many star systems are interconnected by galactic warp lanes known as Starpaths. Some systems are more well-connected than others. On the other hand, some systems are very difficult to get to (i.e., they have fewer warp lane connections and are farther from civilization). Systems that are more difficult to get to have higher values of richness. There are 5 richness levels in SAGE, where higher levels of richness are associated with rare resources and are more challenging to get to.

More rare resources will be dispersed more heavily in richer parts of the galaxy. Furthermore, the yield of those resources is higher in these rich areas. Thus, players are motivated to travel into deep space to extract exceptionally rare resources. However, these locations are also bustling with firepower and combat activity. Stay safe and prepare well if you plan on venturing into one of these rich sectors of space.

Resource Hardness

The second component contributing to resource scarcity is the difficulty of extracting the resource. Within the Star Atlas economy team, we call this the "size of the straw". You might have a giant bucket of water but only a tiny coffee stirrer to extract it with. Your thirst may not be quenched as soon as you would like. And while you're huffing and puffing on that straw, keep in mind the player standing idly by, waiting to strike.

Resources in SAGE have an attribute called Hardness. As you might have guessed, the harder a resource, the more difficult it is to extract, and your yield of that resource will be worse. Consider how much diamond one might find in a kilogram of dirt versus that of iron. You can also think of this as the difficulty of mining the resource. Some resources are simply more challenging to extract, so you get a lower yield per unit of time spent mining.

Ship Size

Some ships will have an easier time extracting resources than others. Once the resource has been identified, you'd be well suited to use your most powerful mining rig to extract resources. Note that larger ships are exponentially more efficient at extracting resources. For example, a Fimbul Airbike might yield 6 units of Iron every second while a Rainbow Arc pulls in about 200. Those numbers are accurate as of this writing. See the following graphic for a visualization of Resource Emissions in SAGE by Ship Class Size.

A ship's class size will be the single largest contributing factor when determining the emission of a resource from a planet. Richness only impacts resource emissions linearly, as does hardness. However, ship class size impacts resource emissions exponentially. A commander designed for resource extraction could outperform an XX- Small by a factor of nearly 300 at times. Bigger ship, bigger resource extraction. As has been announced previously, certain ships will have modifiers in the form of modules and components that will give them significant advantages over ships in their class. However, these bonuses are on a percentage basis. No ship of a smaller class will ever outperform a ship of a larger class, no matter the component bonuses.

03

Game Economy Mechanisms

Resource Usefulness

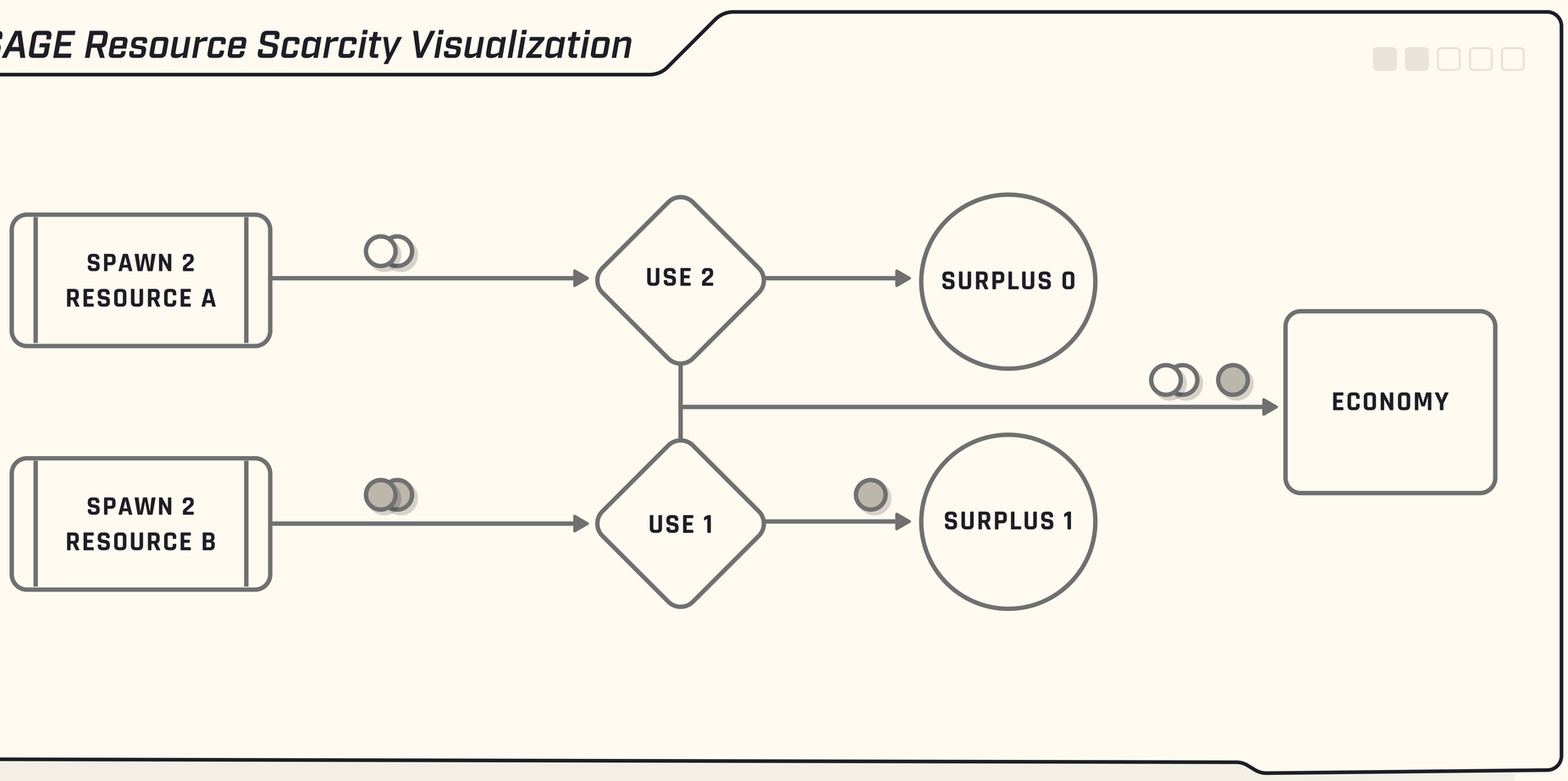
The fourth and final contributor to resource scarcity in SAGE is the resource's usefulness, or utility, in the over-arching economy. To better grasp this concept of usefulness, consider two equally abundant resources (according to the two sections above). However, one of these resources is used during battle and travel, while the other is used only for travel. If those resources are used in the same proportion, then the first one will be twice as scarce because it is twice as useful!

This idea of usefulness will become increasingly important as the SAGE economy grows. Furthermore, this mechanic makes economic arbitrage and "buy low, sell high" feasible. Players can identify these resources that may become more or less useful and use their economic savvy to buy up or sell off resources to turn a profit. For example, suppose a player has a feeling two factions are about to go to war; they might be wise to buy up ammunition, knowing that it will be in high demand next week in the wake of the carnage.

Speaking of demand, resource usage can be easily compared to demand. If usefulness is high, so too will demand for the asset. This logic will help players utilize this gameplay mechanic for personal economic gain. In the beginning, SAGE will likely see a relatively equal distribution of usefulness across all assets in the economy. But as players join the economy and more resources and assets become available to create in time, this distribution will quickly fall apart.

See the diagram below for an example of resource scarcity and usefulness in an economy. You see that resources A and B both come into the economy at the same rate: 2 per period. However, resource B is not as useful as Resource A: only 1 of B is used in the economy while 2 are used of A. This causes the Surplus of Resource B to build up over time. If we were to continue like this forever, the surplus for B would indefinitely grow! The economics team can mitigate such asymmetries through powerful levers. For example, we could either decrease B's spawn rate or increase A's use cases.

SAGE Resource Scarcity Visualization



03

Game Economy Mechanisms

03.2

Managing Resources

One very important aspect of the Star Atlas economy is R4 and R4 burn. Each ship has a different quantity of R4 that it must burn through to complete its daily tasks. Whether a player travels, mines, or fights, they will be using R4. Fuel is used for Travel and Combat. Food is used during mining and combat. Toolkits and Ammo are used only for combat. Notice that while the rewards for combat are great, the cost of resources is also high.

Players extract Hydrogen, Organics, Iron, and Copper and refine them at a Space Station into Fuel, Food, Toolkits, and Ammo, respectively. This means that players will spend some portion of their time mining to finance their non-mining activities. Of course, a player could always purchase the R4 on the open market if they don't want to commit time to mine up the R20 and refine it into R4. Each raw resource has a different resource conversion rate. For example, it might take 1 organic to make 1 food while it takes 5 hydrogen to make 1 fuel.

Just as with mining, larger ships will use exponentially more R4 when operating. Don't worry, your margins are still bigger. In order to keep the economy balanced so that what goes in, comes out, we have cleverly balanced the economy on the ship level. This means that no matter how many players or ships there are in SAGE, the economy will always require a proportional amount of R4 to be burned to keep the economy churning.

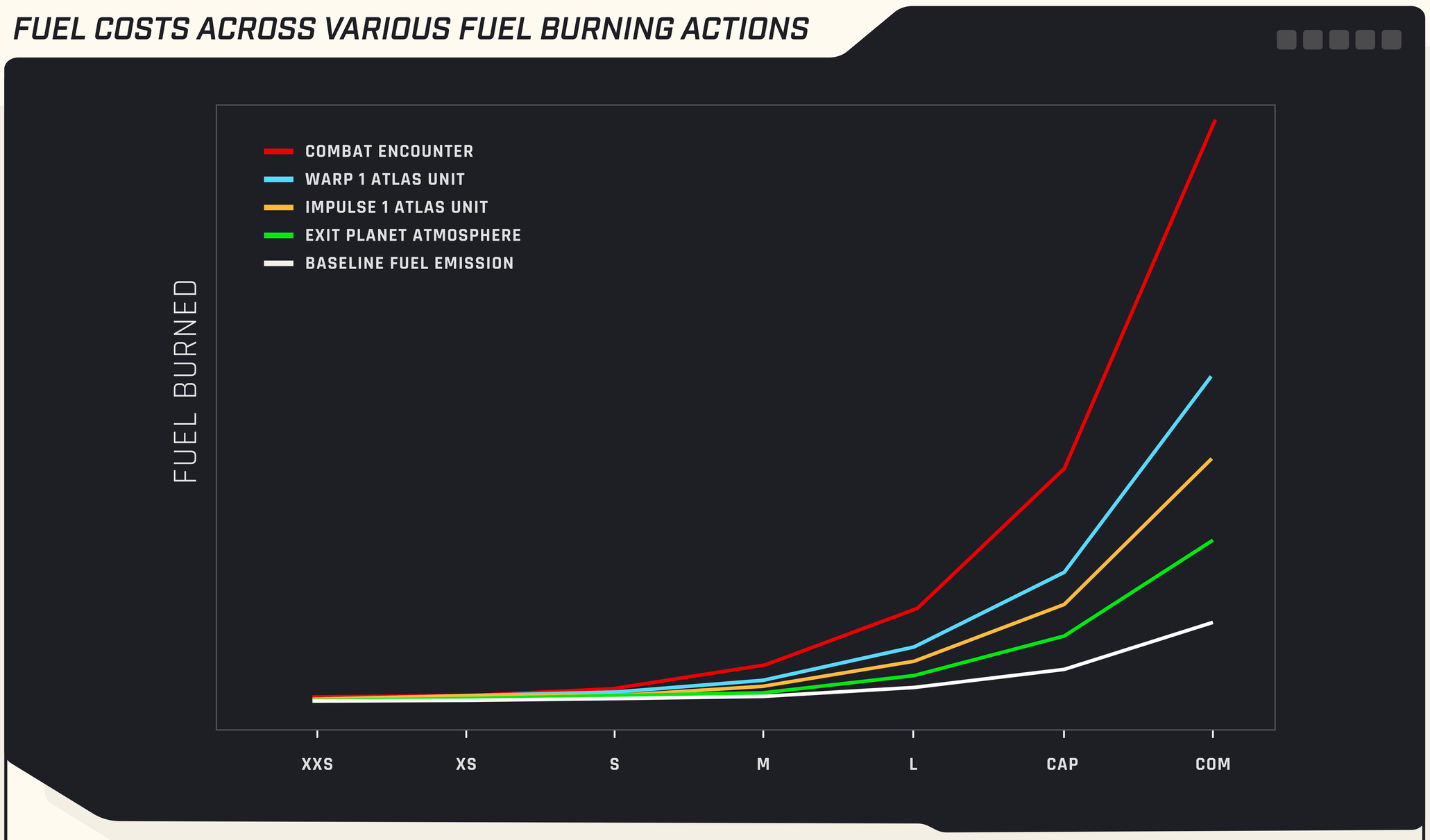
The SAGE economy will have to allocate its time efficiently to best suit the Faction's needs. If too many players are extracting R20, the defense of Star Bases might be low, leaving an opportunity for an enemy faction to strike. This would also likely cause prices of R4 to drop on the open market (an influx of supply usually leads to a decrease in prices). Similarly, if players focus too much on Combat and not enough on resource extraction, they will likely see very high R4 prices on the open market, potentially grinding the economy to a halt.

Players and factions will have to make difficult decisions about time allocation to best support the macro economy while maintaining appropriate levels of combat readiness. Below, we present a visualization of the rate of burn of R4 across ship class sizes for various Fuel burning actions. Fuel-burning actions are currently set to Impulse Travel, Warp Travel, Planetary Exit, and Combat. One can compare the colored lines for Fuel burned to the per-second emissions base rate of Fuel for each ship class (the black line). Please note that all economic levers are subject to change after play testing and the Devnet launch.

03

Game Economy Mechanisms

FUEL COSTS ACROSS VARIOUS FUEL BURNING ACTIONS



There will be several R4-consuming actions at the launch of SAGE. The following list summarizes the types of actions and their associated costs.

ACTION	RESOURCES BURNT	COST
Warp Movement	**FUEL**	**HIGH**
Impulse Movement	**FUEL**	**MEDIUM**
Exit Planet Atmosphere	**FUEL**	**LOW**
Combat Encounter	**FUEL, FOOD, COMBAT, AMMO**	**HIGH**
Mining	**FOOD**	**LOW**
Crafting	**Non-R4**	**-**
Upgrading	**Non-R4**	**-**
Idling	**None**	**-**

03

Game Economy Mechanisms

03.3

Upgrading and Crafting

In the first iteration of SAGE, upgrading and crafting are relatively straightforward. Players will gather resources from the galaxy and use them to convert to R4 as fuel for their ship or craft Star Base upgrading materials. These materials are then used to, you guessed it, upgrade Star Bases. Some other consumables and assets will be slowly introduced into the economy after release.

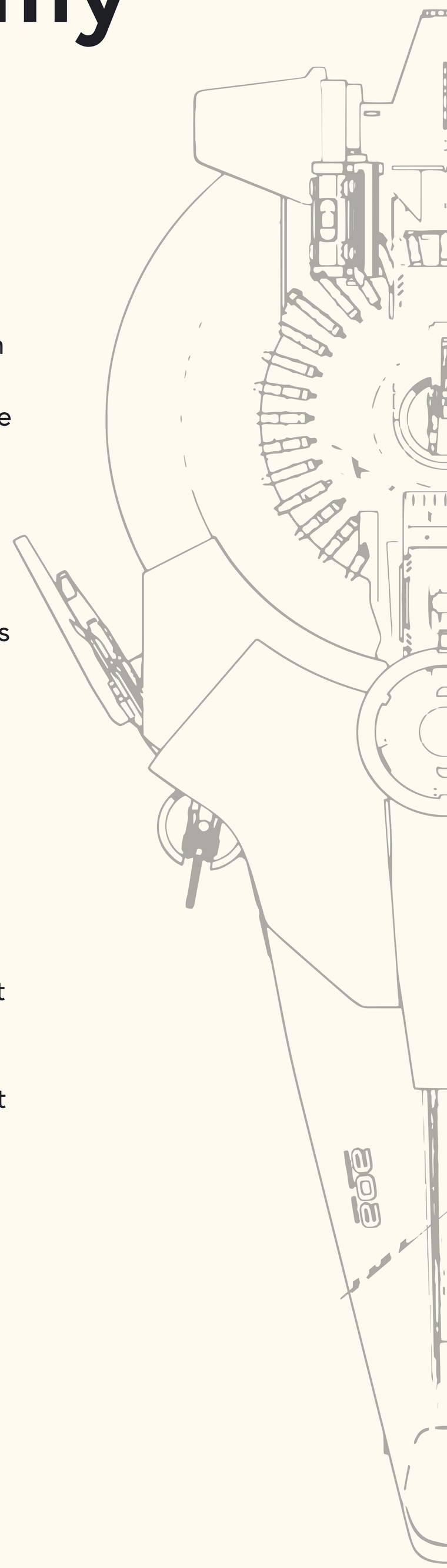
Crafting is simple enough. Each SB upgrading material will need 2 different inputs (R20) of differing quantities. Once a player has these materials, they can begin the crafting process. After some time, the crafted assets will be available for pickup. As one can imagine, more rare upgrading materials (Radiation Absorbers, for example) will require more rare inputs.

Upgrading a Star Base is one of the more unique aspects of the Star Atlas economy. This is a living, breathing economy. It adjusts to the presence of players in it. Each faction will have the opportunity and responsibility to defend its regions of space. The primary way of doing this is to build and upgrade Star Bases throughout their empire. The cost of building a Starbase is negligible. It would only take a few players a couple of hours to create a Star Base Level 0.

Upgrading a Starbase, on the other hand, is quite costly. Because Star Base upgrading is a group effort, the upgrade material quantities are intrinsically linked to the number of players in the economy. Everyone must pull their weight within a faction to successfully defend their region of space. The logic is simple. On average, each player is expected to contribute some effort towards upgrading the Starbase. If all players were to contribute equally, this would be a relatively small time commitment for each player. However, some players will be more interested in attacking other Faction Starbases or defending their own. Thus, the responsibility to upgrade and maintain Starbases will fall into the hands of a select few while others focus on mining and combat. The key is that each player is properly compensated for their economic efforts.

03

Game Economy Mechanisms



03.4

Combat

From survey data, we know that combat is one of SAGE's most highly anticipated gameplay mechanics. While the economics team cares a lot about the costs and benefits of combat, we will leave the explanation of combat in detail to the experts over at the game design team. The Star Atlas economics and game design teams believe that Combat should be appropriately rewarded. To that end, combat rewards two extremely valuable stats to players: XP and LP. The former, as you might have guessed, allows players to level their pilot's license up in order to utilize larger ships. The latter, LP, not only allows players to access exclusive LP Store items during each Epoch, but it is also the measurement by which ATLAS emissions are distributed in the SAGE ecosystem. The next two sections discuss Leveling and ATLAS Earnings in more depth.

Aside from XP and LP, players will receive Loot after defeating enemies in SAGE. This loot will be related to the cargo of the destroyed opponent and the number of assets in the encounter. However, assets in the Star Atlas universe are not invincible. Once destroyed in a dogfight or large battle, many assets are gone forever. One of the keys to creating a sustainable economy is asset depreciation and destruction. Game economies move so much faster than the real world, so assets must be used up with the same rapidity. While some items will be salvageable from a combat encounter, others will not. In this way, combat has serious consequences. However, as discussed in the previous section, it also has serious rewards. To summarize, players will be rewarded with loot drops, XP, and LP for participating in a combat encounter.

We've discussed the costs of Combat briefly in the previous section, but to reiterate, combat costs are Fuel, Food, and Ammo during an encounter. After an encounter, a player may heal with Toolkits, making Combat the most costly type of economic activity in SAGE. A player must go out and produce R4 to save up enough for a battle. Alternatively, they can buy the necessary R4 on the open marketplace to avoid this production loop. The key is that production and combat go hand-in-hand in the SAGE economy.

03

Game Economy Mechanisms

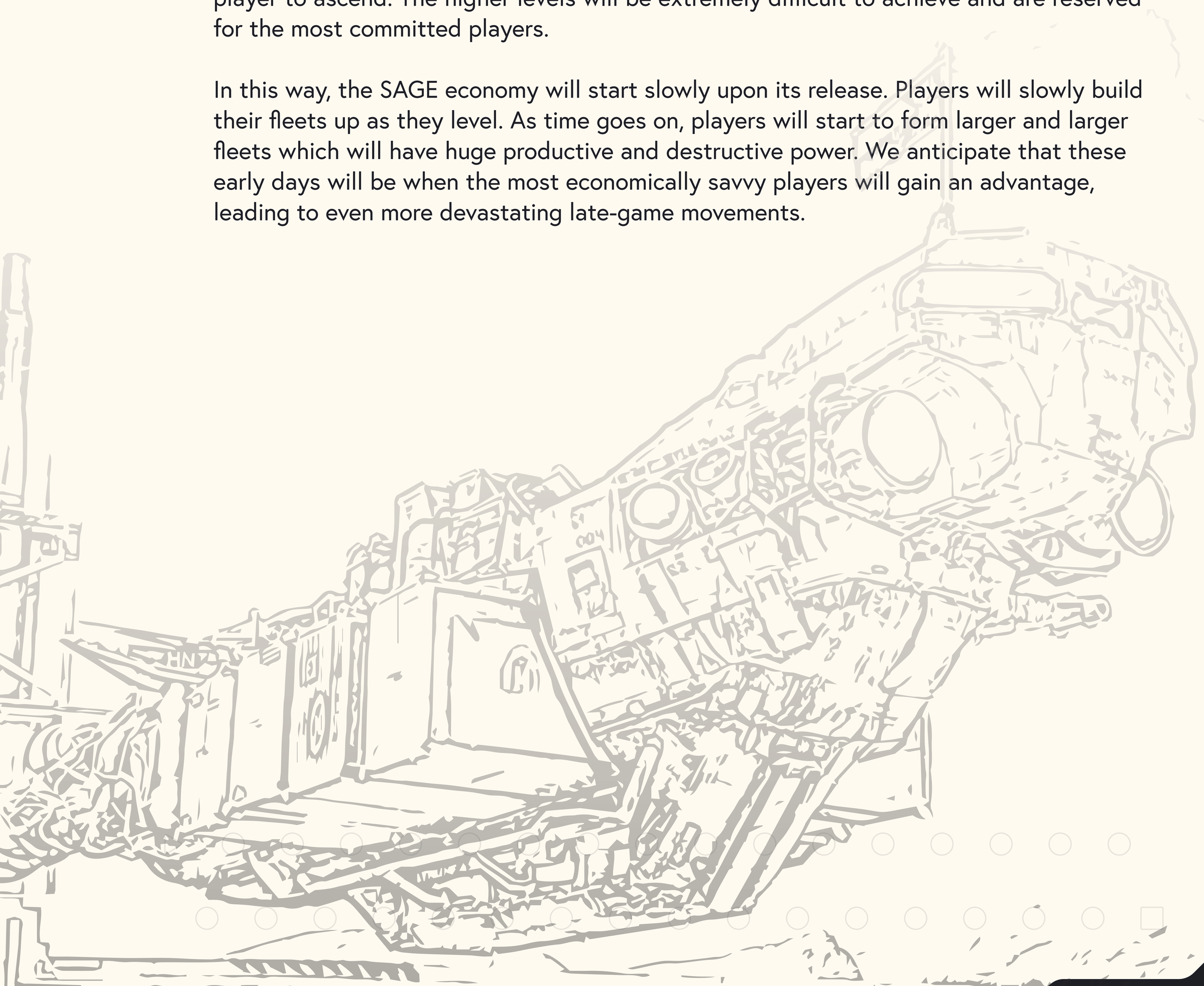
03.5

Leveling

In SAGE, specific actions reward players with XP. These actions include repairing and upgrading Starbases, getting into combat encounters with opposing factions, destroying Starbases, felling planets, and many others. More dangerous feats will naturally reward players with more XP, and XP acquisition will scale with the size of a player's fleet.

At the inception of SAGE, players will all start with the same abilities and rank. It is up to the player to accomplish epic tasks and earn XP quickly to level up and man larger ships. Players with large fleets will start to level up faster, while their small ship-owning counterparts will stay at the slower leveling speed. At launch, there will be 100 levels for a player to ascend. The higher levels will be extremely difficult to achieve and are reserved for the most committed players.

In this way, the SAGE economy will start slowly upon its release. Players will slowly build their fleets up as they level. As time goes on, players will start to form larger and larger fleets which will have huge productive and destructive power. We anticipate that these early days will be when the most economically savvy players will gain an advantage, leading to even more devastating late-game movements.



03

Game Economy Mechanisms

03.6

Earning ATLAS

ATLAS in SAGE is earned and distributed through the Loyalty Points mechanism (LP). Like XP, players will be rewarded with LP for accomplishing faction-specific feats such as defending, repairing, or upgrading a friendly faction Starbase and attacking an enemy Starbase. As SAGE develops, we plan to extend the ways players can earn LP emissions. LP acquisition will be exponentially faster for larger ships, just as ATLAS emissions in SCORE grow exponentially with ship size. The incentives should be 1:1 when SAGE first releases (conditional on ship size). However, LP earnings are effort based. This means that someone willing to put in more effort will get rewarded at a higher rate in SAGE than they would have in SCORE. This is a powerful but important feature.

At the end of an Epoch, ATLAS emissions will be divided among players in SAGE based on their LP share of the total LP earned by their faction. Below is an explanatory formula that shows how LP Share determines ATLAS emissions in SAGE:

$$ATLAS_i = \frac{LP_i}{\sum_{i=1}^{N} LP_i} ATLAS_{faction}$$

where LP_i is simply the amount of LP that an individual player earned during the Epoch, the sigma expression is simply the sum of all LP earned by that player's faction during the Epoch, and, finally, $ATLAS_{faction}$ is simply the total ATLAS allocated to that faction for that SAGE Epoch.

In addition to the emission and earning of ATLAS, SAGE will have several opportunities for players to use their ATLAS outside of the Galactic Marketplace. One such opportunity is what we are currently naming the Loyalty Point store. As players acquire more and more LP during an Epoch, they will gain access to an exclusive LP-locked marketplace that allows them to purchase cosmetic items to deck their Star Atlas assets out in. These could be badges, skins, pets, and much more. We are further developing in-game ATLAS sinks that allow players to use their earned ATLAS to improve gameplay experiences. these will never give a player a power advantage per ship, but they might save the player a few minutes at a time.

4 Conclusion

We hope you've enjoyed reading about the SAGE economy in the context of SCORE and the new and exciting gameplay loops that will drive the Star Atlas economy.

Our powerful guilds will no doubt read this document through multiple times. In Star Atlas, there is power in numbers. Coordination and efficiency, just like in the real-world, lend a powerful advantage to those willing to combine their efforts for the greater good of the economy. Our players, whether they are vagabonds or massive corporations, should read through this manual in order to best prepare for the full launch of SAGE.

In addition to reading this document, participate in the SAGE V0 devnet launches and other testing phases to better understand the SAGE economy and help our team. The economics team understands the importance of balance in a virtual setting. SAGE is an important step to ensuring that the assets within the Star Atlas ecosystem hold their value and introduce new players from around the world into the gaming and web3 space. Star Atlas is creating one of the most economically realistic web3 gaming experiences available, and we're very excited to have you all along for the flight.

Legal Disclaimer

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