March 4, 2020

Re: RFP #2053 – **Economic Scenario Generator (ESG)**

The National Association of Insurance Commissioners (NAIC) is soliciting proposals from vendors to provide, maintain, and support an ESG producing real-world interest and equity scenarios to be prescribed for use in calculations of life and annuity Statutory reserves according to the *Valuation Manual* (e.g. VM-20, VM-21) and capital under the NAIC RBC requirements (e.g. C3 Phase 1, C3 Phase 2).

The chosen vendor will deliver an ESG and supporting tools that meet requirements set by regulators, along with robust documentation and training materials. On an ongoing basis, the vendor will produce the scenarios, support end users of the ESG, research changes considered by NAIC’s Life Actuarial (A) Task Force and Life Risk-Based Capital (A) Working Group and implement those that are adopted.

To receive consideration, proposals should be sent electronically to [Proposals@naic.org](mailto:Proposals@naic.org) by 5 PM Central on Friday, May 1, 2020. In addition to ensuring your proposal addresses all items within the scope of work, the proposal should clearly state the price plus any service charges or fees that could be incurred in the delivery of this service.

**Request for Proposal Schedule**

Wednesday, 03/04/2020 Release of RFP

Friday, 03/13/2020 Notification of intent to bid to [Proposals@naic.org](mailto:Proposals@naic.org)

Wednesday, 03/25/2020 Submission of questions to [Proposals@naic.org](mailto:Proposals@naic.org)

Wednesday, 04/08/2020 Responses to questions provided via email and the NAIC website

Wednesday, 04/15/2020 Discussions held with vendors

Friday, 05/01/2020 Proposal due to NAIC to [Proposals@naic.org](mailto:Proposals@naic.org)

May 2020 Vendor Selection and Award of RFP

Please submit questions regarding any aspect of this project to Jim Woody via [Proposals@naic.org](mailto:Proposals@naic.org) by close of business on Wednesday, March 25, 2020. All questions will be consolidated and answers provided to all potential vendors and posted to the NAIC website by close of business on Wednesday, April 8, 2020.

**Selection Criteria**

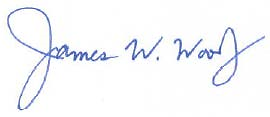
A committee of NAIC staff will review the proposals and award the project.

The selection will be based on the following criteria:

* Completeness of the proposal
* Qualifications of staff dedicated to developing and supporting the ESG
* Professional reputation of the firm
* Ability to deliver the items listed in Section II
* Capability to perform updates to economic scenario generator (ESG) features, parameters, and tools in a timely manner
* Flexibility in being able to work through the NAIC process to customize ESG features, parameters, and tools as needed
* Robustness of ESG and calibration documentation
* Quality of training materials and other means for providing support
* Price, including one-time and ongoing costs

NAIC reserves the right to reject any or all proposals, request new proposals, or request additional information. NAIC reserves the right to further negotiate with any or all bidders. The NAIC also reserves the right to cancel this RFP at the direction of its membership. Thank you for your consideration.

Sincerely,



James W. Woody

NAIC Chief Financial Officer

CC: Andy Beal, NAIC Chief Operating Officer/CLO

Donna Powers, NAIC Strategic Business Initiatives Assistant Director

**SCOPE OF WORK FOR RFP # 2053**

**Economic Scenario Generator**

1. **BACKGROUND AND PURPOSE**

The American Academy of Actuaries (Academy) has developed an Economic Scenario Generator (ESG), which may be found on the Society of Actuaries website at <https://www.soa.org/tables-calcs-tools/research-scenario/> and <https://www.naic.org/cmte_e_lrbc.htm>. The ESG is currently used by the life insurance industry in calculations of life and annuity reserves and capital.

Beginning in early 2017, the Academy notified the Life Actuarial (A) Task Force (LATF) that it did not have the resources to maintain the ESGs, except in their current form until a suitable replacement can be found. Since the NAIC does not currently have the resources or expertise to develop and maintain an ESG, a third-party ESG vendor is needed for these functions. In an open meeting held on 7/16/19, LATF and the Life RBC Working Group (LRBC WG) requested that NAIC staff consider issuing a Request for Proposals (RFP).

The purpose of this RFP is to solicit proposals from vendors to provide, maintain, and support an ESG producing real-world interest and equity scenarios to be prescribed for use in calculations of life and annuity Statutory reserves according to the *Valuation Manual* (e.g., VM-20, VM-21) and capitalunder the NAIC RBC requirements (e.g., C3 Phase 1, C3 Phase 2)**.** The chosen vendor will deliver an ESG and supporting tools that meet requirements set by regulators, along with robust documentation and training materials. On an ongoing basis, the vendor will produce the scenarios, support end users of the ESG, research changes considered by LATF and LRBC WG and implement those that are adopted.

1. **DELIVERABLES**

This project requires an initial set of deliverables, as well as ongoing maintenance and support. As noted in Section III below, bids should include a detailed breakdown of costs for each of the initial and ongoing items listed in A-P below.

Initial Deliverables (Items with One-Time Costs)

* 1. An existing ESG capable of producing, at a minimum, real-world interest rate, equity, and bond fund return scenarios for use in calculations of life and annuity Statutory reserves according to the Valuation Manual (e.g., VM-20, VM-21) and capital under the NAIC RBC requirements (e.g., C3 Phase 1, C3 Phase 2). If the ESG can produce additional variables beyond the minimum requirements (e.g. inflation rates, risk-neutral scenarios, corporate bond spreads, implied volatility scenarios, credit defaults, credit rating migrations, etc.), indicate if there is an additional cost for these features.
  2. Meetings with NAIC staff and regulators as needed to discuss the vendor’s existing economic scenario generator (ESG) features and parameters, as well as potential modifications.
  3. Customization of ESG features and parameters to reflect any modifications adopted by regulators.
  4. A scenario reduction tool to allow companies to choose a specific number of representative scenarios (e.g. 100, 500, 1000, etc.) from a universe of 10,000 scenarios. Scenario subsets provided by the tool as of a valuation date must contain the same scenarios for all users of the tool.
  5. Calibration criteria used to determine whether stratified scenario subsets are sufficiently dispersed relative to the universe of 10,000 scenarios.
  6. A tool to generate scenarios for the VM-20 Stochastic Exclusion Ratio Test.
  7. A tool to generate the VM-21 Company-Specific Market Path method scenarios.
  8. A tool to generate statistics on the output of the ESG.
  9. Full documentation on the ESG specifications, calibration, and tools.
  10. Robust training materials for regulators and industry end-users.

Ongoing Production, Maintenance and Support (Items with Ongoing Costs)

* 1. Run the ESG as of each month-end and produce the required scenarios on the first business day of the following month. The process to generate the scenarios must be completed in time to post scenarios on business day one of each month. Statistics on the output of the ESG are expected to be delivered simultaneously with the scenarios. Note that NAIC staff intends to provide the scenarios on the NAIC website to ensure they are available to all companies regardless of whether they have licensed the vendor’s software.
  2. Develop parameter updates at a frequency determined by the regulators. The process to update the ESG will include the following steps:
     1. Perform research on potential changes as requested by regulators.
     2. Document and present potential changes to regulators for exposure and adoption. Attend regulator meetings as needed to respond to questions/comments received during the exposure period. Materials to be provided for consideration of changes should include a) discussion on how changes were vetted for complex interactions between parameters, b) attribution analysis showing the impact of each change, and c) documentation on the above in sufficient detail to allow independent review.
     3. Modify the ESG to reflect final adopted updates in a timely manner and provide evidence to NAIC staff that they were made appropriately.
     4. Update documentation on the ESG specifications.
  3. Update training materials for regulators and industry end users.
  4. Provide full support to end users of the economic scenario generator (ESG) scenarios who have licensed the ESG software.
  5. Provide help desk support to end users of the ESG scenarios who have not licensed the ESG software.
  6. Provide scenarios to support field testing of the new ESG under regulatory reserving and capital frameworks.

1. **CONTENT OF PROPOSAL**

For final evaluation of proposals, it is important that vendors provide the information requested below:

* 1. A breakdown of the number of staff dedicated to ESG development by division (e.g., parameterization, software development, documentation, training, etc.) along with the resumes of key staff members.
  2. The number of life insurance and annuity companies that are currently licensed to use the ESG for real-world liability valuation. Additionally, please provide at least three named clients to act as references along with their contact information.
  3. Description of the ESG indicating the type of model (e.g. stochastic log volatility, independent log normal, regime switching lognormal with number and frequency of regimes, stochastic volatility jump diffusion, other etc.). The vendor should also include a discussion of the benefits and limitations of their recommended ESG model.
  4. Description of the ESG parameters and how they are determined (e.g. fitting model to actual historical data using maximum likelihood estimation, etc.).
     1. If model fitting is done using historical data, detail the source of the data and length of the period used and whether any adjustments are made to the source data.
     2. Describe how any parameters, including mean reversion parameters, are derived and whether they are static or dynamic.
     3. Provide information on the level of customization available to regulators in specifying ESG features and parameters. For example, regulators may want to specify a certain type of mean reversion formula, the historical period used to determine parameterization, or other items.
  5. Description of the types of returns that can be simulated by the ESG (e.g. Treasury rates, bond returns of different maturities and credit qualities, equities of different indices, different types of international equities, currencies, inflation rates, etc.).
  6. Details on how credit spreads and defaults are implicitly reflected or explicitly simulated in bond fund returns.
  7. Description of the methodology for completing the full Treasury yield curve from the simulated interest rates.
  8. The level of dependency between different financial variables in the economic scenario generator (ESG). If the ESG is integrated, describe how the correlations are developed and whether they are dynamic (e.g. either exhibiting both positive and negative correlations if appropriate, etc.).
  9. Statistics on the range of scenarios produced (e.g. the percentage of scenarios with low interest rates coupled with low equity returns, low interest rates coupled with high equity returns, etc.).
  10. An analysis showing how the range of scenarios produced compares to the current Academy VM-20/VM-21 and C3 Phase 1 ESGs, including testing over different historical and/or potential future economic conditions.
  11. The frequency of review and consideration of updates for each ESG parameter. Please describe the rationale for the frequency of each parameter update and specify which parameters require judgement to calibrate and those that do not (e.g. parameters updated formulaically).
  12. Information on how end-users of the ESG will be able to generate scenarios on-the-fly through a mechanism such as software licensing, an application programming interface (API), and/or available full documentation of the technical workings the ESG.
  13. A copy of existing ESG documentation.
  14. A copy of existing ESG training materials, and a description of any other support provided.
  15. A detailed breakdown of costs for each of the one-time and ongoing deliverables listed in Section II. Bids should also include both first year and ongoing ESG software licensing costs for NAIC staff, regulators, and companies that may wish to license the software for up to five years.

**IV. SELECTION PROCESS**

The NAIC will be responsible for the selection of the vendor that will be awarded this project to be funded. Input from regulators and other subject-matter experts may also be sought, but the NAIC will make the final decision.

The following factors will be considered in making the vendor selection:

* Completeness of the proposal
* Qualifications of staff dedicated to developing and supporting the ESG
* Professional reputation of the firm
* Ability to deliver the items listed in Section II
* Capability to perform updates to ESG features, parameters, and tools in a timely manner
* Flexibility in being able to work through the NAIC process to customize ESG features, parameters, and tools as needed
* Robustness of economic scenario generator (ESG) and calibration documentation
* Quality of training materials and other means for providing support
* Price, including one-time and ongoing costs

1. **CONFLICTS OF INTEREST**

The NAIC recognizes that, given the broad scope of this project, any vendor with the

experience reasonably necessary to produce the ESG may have certain conflicts of

interest based upon past associations with industry participants. These conflicts of

interest will not automatically disqualify the vendor, but the vendor must have

verifiable policies and procedures in place designed in compliance with established

industry standards to address conflicts of interest issues that may arise.

1. **CONDITIONS**

The NAIC reserves the right to not award a contract for this ESG. Reasons for

not awarding a contract could include, but are not limited to, a lack of acceptable

proposals or a finding that insufficient funds are available to proceed. The NAIC also

reserves the right to redirect the project as is deemed advisable. The NAIC also reserves the right to cancel this RFP at the direction of its membership.

1. **QUESTIONS**

Any questions regarding the Scope of Work should be directed to: [Proposals@naic.org](mailto:Proposals@naic.org). Questions related to any other matter should be directed to Jim Woody, e-mail: [JWoody@naic.org](mailto:JWoody@naic.org)

**NAIC CONFLICT OF INTEREST FORM**

**FOR RETENTION OF CONSULTANTS SUBJECT TO BID**

**NAIC RFP 2053**

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| --- |
| * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (“*Entity*”) did not provide gifts, favors, membership points or any other benefits to any employee or representative of the NAIC **to affect the bidding and selection process** for this contract. * *Entity* will not provide or receive gifts, favors, membership points or any other benefits to any employee or representative of the NAIC **in connection with the negotiation or implementation of this contract.** * *Entity* owners, principals and employees negotiating or implementing this contract on behalf of *Entity* are not former NAIC employees unless disclosed below. * *Entity* owners, principals and employees negotiating or implementing this contract on behalf of *Entity* are not immediate family members of NAIC employees unless disclosed below.   The signatory below is a duly authorized representative of *Entity* and hereby certifies to the authenticity and veracity of this disclosure.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_  *Authorized Entity Signature* *Date*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  *Print Name & Company Name* |
| DISCLOSURE OF POTENTIAL CONFLICT \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_  *NAIC Executive Approval* *Date* |

Any *Entity* that desires to contract with the NAIC must complete this form, including vendors, consultants and purchasers of goods or services. All potential conflicts must be disclosed and approved before the contract execution.

## CERTIFICATION

## DISCLOSURE

NAIC 12/09

STANDARD TERMS AND CONDITIONS

**for**

**NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS**

**PURCHASE ORDERS FOR SERVICES**

As used herein, “Seller” means the person, firm, or corporation to whom this Purchase Order is issued; “Buyer” means the National Association of Insurance Commissioners, a nonprofit Delaware corporation.

1. **Acceptance of Terms and Conditions.** Seller agrees to perform the services (“Services”) described in any purchase order (“Purchase Order”) in accordance with these Terms and Conditions. Upon acceptance of a Purchase Order or upon commencement of Services, Seller shall be bound by these Terms and Conditions and all provisions set forth on the face of any applicable Purchase Order, whether Seller signs or otherwise acknowledges these Terms & Conditions or the Purchase Order, unless Seller objects to such Terms and Conditions in writing prior to commencing Services.
2. **Revocable.** This writing does not constitute a firm offer and may be revoked at any time prior to acceptance.
3. **No modification.** No agreement or other understanding in any way altering the terms, prices or conditions of the applicable Purchase Order or these Terms and Conditions shall be binding upon Buyer unless made in writing and signed by Buyer’s duly authorized representative.
4. **Termination.** Buyer may immediately terminate the Purchase Order upon written notice to Seller if Seller fails to perform or otherwise breaches these Terms and Conditions, files a petition in bankruptcy, becomes insolvent, or dissolves. Buyer may terminate the Purchase Order for any other reason upon thirty (30) days’ written notice to Seller. Upon receipt of notice of termination, Seller shall cease to provide Goods and/or perform Services pursuant to the Purchase Order. In the event of termination, Buyer shall be liable to Seller only for those Services satisfactorily performed before the date of termination, less appropriate offsets. Buyer shall not be subject to any charges or other fees as a result of such cancellation. Seller may terminate this Agreement upon written notice to Buyer if Buyer fails to pay Seller within sixty (60) days after Seller notified Buyer in writing that payment is past due and that it intends to terminate the Purchase Order.
5. **Warranty of Services.** Seller represents and warrants that all Services shall be completed in a professional, workmanlike manner, with the degree of skill and care that is required by current, good, and sound professional procedures. Further, Seller warrants that the Services shall be completed in accordance with applicable specifications. Seller represents and warrants that the performance of Services hereunder will not conflict with, or be prohibited in any way by any other agreement or statutory restriction to which Seller is bound.
6. **Seller’s Indemnification.** Seller shall indemnify, hold harmless, and at Buyer’s request, defend Buyer, its officers, directors, agents and employees, against all claims, liabilities, damages, losses and expenses, including attorneys’ fees and costs of suit arising out of or in any way connected with any claim by a third party against Buyer alleging that the Services infringe a patent, copyright, trademark, trade secret or other proprietary right of third party. Seller shall not settle any such suit or claim without Buyer’s prior written consent. Seller shall also indemnify and hold harmless Buyer from any injury to person or property arising out of or caused by Seller’s performance of the Purchase Order. Seller agrees to pay or reimburse all costs that may be incurred by Buyer in enforcing this indemnity provision, including attorneys’ fees.
7. **Compliance with Laws.** Seller shall comply with all laws and regulations of federal, state and local governments, including without limitation, laws and regulations dealing with fair labor standards, civil rights, and public contracts. Seller further warrants that all Services performed pursuant to the Purchase Order have been produced or performed in compliance with such laws and regulations and Seller agrees to indemnify Buyer for any liability resulting from such noncompliance by the Seller.
8. **Price.** The price to be paid by the Buyer shall be the price contained in Seller’s bid and/or the price stated on the face of the Purchase Order whichever is less. Seller represents the price contained in Seller’s bid is no higher than Seller’s current prices on orders by others for similar products or services under similar or like conditions and methods of purchase.
9. **Invoices.** Seller shall submit invoices on each Purchase Order after each delivery. Buyer shall not be charged sales tax and shall furnish a tax exemption certificate upon request. Discounts will be taken from the date of acceptance of services or date the invoice is received by Buyer whichever is later. Buyer shall retain the right of offset.
10. **Force Majeure.** Buyer shall not be liable for any failure to perform including failure to: (1) accept performance of Services, or, (2) take delivery of the Goods as provided if caused by circumstances beyond Buyer’s control which make such performance commercially impractical including, but not limited to, acts of God, fire, flood, acts of war, government action, accident, labor difficulties or shortage, or the inability to obtain materials, equipment or transportation.

Seller shall not be liable for any failure to perform including failure to: (1) provide Services, or (2) deliver Goods as provided if caused by circumstances beyond Seller’s control which make such performance commercially impractical including, but not limited to, acts of God, fire, flood, acts of war, government action, accident, labor difficulties or shortage, or the inability to obtain materials, equipment or transportation.

1. **Insurance.** Seller shall be solely responsible for maintaining adequate auto, workers’ compensation, unemployment compensation, disability, liability and other applicable insurance, as is required by law or as is the common practice in Seller’s trade or business, whichever affords greater coverage. Seller shall carry Comprehensive General Liability coverage and Umbrella or Excess Liability coverage with minimum limits of $1,000,000 per occurrence and $2,000,000 in the aggregate for property damage and bodily injury. Upon request, Seller shall provide Buyer with certificates of insurance evidencing adequate coverage naming the Buyer as additional insured.
2. **Limitation of Liability.** IN NO EVENT SHALL BUYER BE LIABLE TO SELLER OR SELLER’S AGENTS, OR ANY THIRD PARTY FOR ANY INCIDENTAL, INDIRECT, SPECIAL, OR CONSE~~-~~QUENTIAL DAMAGES ARISING OUT OF, OR IN CONNECTION WITH, THIS AGREEMENT, WHETHER OR NOT BUYER WAS ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
3. **Confidentiality.** In the event Seller gains written or oral confidential information of or from the Buyer, Seller agrees not to reveal to anyone or make use of such knowledge and information at any time for any purposes except as necessary in the course and scope of provision of Goods or performance of Services specified hereunder. Upon termination of the Purchase Order, Seller agrees to deliver to Buyer all such confidential information or work product belonging to Buyer.
4. **Assignability.** Seller shall not assign or subcontract this Purchase Order or any of its rights or obligations hereunder without the prior written consent of Buyer. Any assignment or transfer without such written consent shall be null and void.
5. **Publicity.** Seller shall not use Buyer’s name in any form or attribution in connection with any solicitation, publicity, advertising, endorsement or other promotion.
6. **Survivability.** Any obligations and duties, which by their nature extend beyond the expiration or termination of this Purchase Order shall survive the expiration or termination hereof.
7. **Choice of Law.** This Purchase Order shall be construed in accordance with, and disputes shall be governed by, the laws of the State of Missouri.
8. **Severability.** If any provision of this Purchase Order shall be deemed to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

**NAIC 8/2012**

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Do you agree to the NAIC Terms & Conditions?

YES \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature Date

NO \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature Date

Please Sign one.

If NO,

Please provide your Terms and Conditions of Sale if you do not agree to the NAIC Terms & Conditions attached.